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ABSTRACT

This document reports on a national symposium that constituted the first phase of a research study designed to determine how to use intrinsic motivation and self-empowerment concepts to retain special needs learners who are potential dropouts in postsecondary vocational education programs. The first chapter (by Brown and Wotruba) contains the project's rationale, an overview of related activities, and a 56-item bibliography. The second chapter (by Brown and Retish) provides a summary of the issues identified during the symposium, the implications for postsecondary vocational education, recommendations regarding research that should be conducted, and a seven-item bibliography. The remainder of the document consists of appendices devoted to presentations and reactions to presentations made at the symposium. Appendix A is entitled "Intrinsic Motivation and Special Education" (Deci). Appendix B is "Empowering People with Disabilities" (Hockenberry). The reactions to that presentation by a panel of experts (Goldberg, Beck, Brunberg, Imdike, Krantz, Erlichman, Wilke, and Orke) and the audience are in Appendix C. Appendix D contains "Metacognition and Empowerment: Implications for Vocational Training" (Borkowski). Appendix E contains a reaction to Borkowski's presentation (Turnure). Appendix F provides a summary of the symposium and review comments (Evans). (CML)

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AN INVESTIGATION OF MOTIVATION'S ROLE IN POSTSECONDARY VOCATIONAL TRAINING PROGRAMS FOR AT-RISK LEARNERS AND THEIR ENTRY INTO THE WORK FORCE

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CHAPTER 1

AN ANALYSIS OF MOTIVATION FACTOR'S INFLUENCE ON THE RETENTION OF SPECIAL NEEDS LEARNERS IN POSTSECONDARY VOCATIONAL EDUCATION PROGRAMS

James M. Brown and Joseph Wotruba
University of Minnesota

Introduction

Clearly, efforts to successfully gain access to the work force represent a major challenge for many individuals in our society. Madeline Will (1984) noted that "... youth with disabilities face an uncertain future when they leave the nation's public schools." America's education system promises to enhance students' employment opportunities and their job-related achievements; however, between 50% and 80% of the working age adults who reported having disabilities continue to be jobless (U. S. Commission on Civil Rights, 1983). Researchers and practitioners in the field of vocational education have a clear obligation to examine concepts and strategies by which they can enhance the transition of a wide range of persons with special learning needs from school into the work force and into meaningful, productive adult lives.

Statement of the Problem

In recent years, increasing numbers of students with special learning needs (who previously received legislatively mandated educational support services within their elementary and secondary education programs) have left those programs to enter their communities as adults. In Minnesota, as well as elsewhere, many of these people attempt to access postsecondary vocational training programs with the hope of developing skills that will enhance their transitions into careers as gainfully employed adults. For many, however, their success in gaining access to and completing postsecondary programs has been problematic. The need to improve and expand postsecondary vocational education programs' capabilities to effectively accommodate these students once they leave secondary school programs has been well established in the literature. Unfortunately, too many students never receive the vocational training and support services needed to successfully make the transition into the work force and adult life. Such problems have contributed to high levels of unemployment, underemployment, and continued segregation from the mainstream of society.

Efforts to enhance postsecondary vocational educators' efforts to accommodate a broad array of client groups have tended to be based upon the following assumptions:

1. Programs which accommodate individuals with disabilities, disadvantaging characteristics, and other special learning needs should stress opportunities for increased integration and normalization into everyday community environments.
2. Postsecondary vocational education programs are desirable and effective settings to train special needs learners for productive careers in the work force.
3. Recent instructional innovations and advancements have improved the overall capacity of vocational education to accommodate the efforts of students with special learning needs to achieve greater levels of competence during their training, thus raising professional and community expectations for making vocational education available to increased numbers of these individuals.
4. Successful transition into postsecondary vocational training programs is heavily influenced by the quality and effectiveness of previous school programs and experiences, as well as efforts by schools and community service agencies to effectively plan for students' transition into and access to vocational education.
5. Efforts to better assure that special needs learners successfully complete their postsecondary vocational education program should be based on continuous informal and formal assessments of students' performance during training and subsequent availability of appropriate support service interventions (e.g., counseling and technical tutoring).

"Special Needs Learners" include persons with (a) disabilities, (b) academic and/or economic disadvantage, (c) limited English proficiency, and (d) those who have been adjudicated. In order to clarify the terms, they are defined as follows:

I. "Handicapped persons" or "persons with disabilities" are terms that tend to be used interchangeably to refer to persons who have characteristics which are associated with one or more of the categories which make them eligible to receive special education services (if they also meet certain other requirements such as age and testing results). The term "persons with disabilities" is used in this publication, since the term "handicapped person" is considered demeaning by many people.

II. The term "disadvantaged" refers to persons other than handicapped individuals who meet the following criteria which were specified in the Final Regulations for Minnesota's State Vocational Education Program and Secretary's Discretionary Programs of Vocational Education (.34 CFR 400.4), Department of Education, Office of Vocational and Adult Education (August 16, 1985) (cited in Johnson, Brown, & Werdin, 1988).

A. "Economically disadvantaged" refers to a family or individual which the State Board identifies as low income on the basis of uniform methods that are described in the State Plan. A state must use one or more of the following standards as an indication of low income:

1. Annual income at or below the official poverty line established by the Director of the Office of Management and Budget;
2. Eligibility for Aid to Families with Dependent Children or other public assistance programs;
3. Receipt of a Pell Grant or comparable state program of need-based financial assistance; and
4. Eligibility for participation in programs under Title II of the Illinois Test of Psycholinguistic Abilities (ITPA).

B. The "academically disadvantaged" means those persons who score at or below the 25th percentile on a standardized achievement or aptitude test, whose secondary school grades are below 2.0 on a 4.0 scale (where the grade "A" equals 4.0), or fails to attain minimal academic competencies. This includes those whose prior substantial academic problems unrelated to a handicap have been documented and who fail to maintain adequate progress without academic intervention in basic reading, mathematics, oral and written communications, and/or study skills. This definition does not include individuals with learning disabilities.

III. "Limited-English Proficient" (LEP) means individuals:

A. Who were not born in the United States and whose native language is a language other than English; or who came from environments where a language other than English is dominant, or who are American Indian and Alaskan Native students and who came from environments where a language other than English has had a significant impact on their level of English language proficiency.

B. Who, by reason thereof, have sufficient difficulty speaking, reading, writing, or understanding the English language to deny those individuals the opportunity to learn successfully in classrooms where the language of instruction is English or to participate fully in our society.

IV. "Adjudicated" means individuals who have been involved in matters which were settled by actions of the judicial system, i.e., the courts.

V. "At-Risk Learners" are those persons who have attributes which interfere with their academic achievement, social and emotional development, and/or career development. These attributes can include those normally associated with "special needs learners," "persons with disabilities," and "handicapped persons," as well as a range of other attributes such as chemical abuse or low/inappropriate motivation.

Obviously, there are many similarities among the groups described above. The term "special needs learner" is very familiar to support services personnel within postsecondary vocational education programs. However, this publication seeks to broaden the focus of postsecondary vocational education programs' services beyond those typically offered to the general population, to include students with special needs (i.e., handicapped, disadvantaged, and limited-English proficient) and those who are at-risk of not attaining meaningful educational and career development goals. Thus, the terms "at-risk" and "special needs learners" will be used interchangeably throughout this publication to refer to all persons who are likely to encounter difficulties while participating as students in postsecondary vocational programs. It is hoped that a greater understanding of motivation factors will help postsecondary vocational educators improve their abilities to accommodate these special needs/at-risk learners more effectively.

The Primary Objectives of This Project

Too often, systems which are designed to retain students who might otherwise drop out of their postsecondary vocational training programs ignore the influence of student characteristics which are related to the affective domain (e.g., students' attitudes and motivation levels), and how these factors inhibit and/or enhance the retention of those at-risk learners (Brown, 1987). The assessment of motivation levels represents a crucial, but consistently ignored, strategy which could enhance postsecondary vocational training programs' ability to retain at-risk learners until they have attained their training goals. In addition, the attainment of long-term education and career goals is assumed to depend heavily on motivation factors, such as self-determination or autonomy, intrinsic motivation, and perceived benefits of extrinsic system-level rewards, that influence individuals' academic and career achievements.

In 1987, the Minnesota Research and Development Center (MRDC) at the University of Minnesota began an on-going research program to investigate the influence of motivational factors on student retention in postsecondary vocational education programs. This project is one component of the special needs-related research program at the MRDC. An initial component of this new research project was the conduct of a National Symposium on Motivation and Empowerment designed to draw together the talents and special expertise of nationally recognized researchers and leaders on the topic of motivation and learning. The commentaries and key presentations delivered at that Symposium represent the first stage of a long-term effort to develop a model of motivation concepts and to identify potential topics for future related research at the MRDC. It is hoped that the outcomes of this Symposium and subsequent research activities will enhance efforts to develop strategies that will enable vocational educators to more quickly and effectively identify pertinent learner characteristics and to implement appropriate instructional accommodations and retention strategies for special need learners who are at risk of (a) failing to complete their vocational training programs, and (b) failing to make an efficient/effective transition from school into the work force. In order to accomplish these outcomes, vocational educators will need new and/or revised tools and procedures to identify, analyze, and accommodate a broader spectrum of relevant learner attributes.

Short-Term Goals

Thus, this research project represents the initial phase of an effort designed to identify and analyze intrinsic motivation-related factors which might be used to enhance the retention (and subsequently, the effectiveness of training) of special needs learners in postsecondary vocational education programs. These student retention efforts are very likely to enhance subsequent efforts by such students to make the transition into meaningful, productive careers in fields related to their vocational training.

Long-Term Goals

This research program's long-term goals focus on determining how to apply intrinsic motivation and empowerment issues to enhance efforts to help postsecondary vocational education students with special needs to complete their vocational training programs and subsequently, to avoid, minimize, and/or accommodate motivation-related problems. Future MRDC research efforts will draw upon the Symposium issues and concepts reported in this publication. This MRDC research project's long-term objectives include (a) identifying how intrinsic motivation-related student characteristics interact with other learner characteristics and learning environment factors to inhibit or enhance their successes in postsecondary vocational education programs; (b) the development of assessment strategies to assess affective student characteristics in order to enhance vocational education programs' abilities to retain

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An Investigation of Motivation's Role in Postsecondary Vocational Training Programs for At-Risk Learners and their Entry into the Work Force

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potential dropouts; and (c) the implementation, validation, and dissemination of student retention procedures and concepts related to those affective characteristics.

Issues Addressed By This Project

This publication contains the following: (a) the project's rationale and an overview of the project's activities; (b) a summary of the issues identified during the Symposium, the implications of those findings for postsecondary vocational education programs, and recommendations regarding subsequent research that should be conducted; and (c) the Appendix which contains the proceedings of the National Symposium on Motivation and Self-Empowerment (referred to within this publication as the Symposium).

Project Rationale

Recent Trends

The recent emphasis on efforts to retain at-risk learners (typically referred to as "special needs students") in vocational programs until they develop the skills needed to successfully make the transition into meaningful, productive working careers has been supported by several major legislative initiatives: (a) Public Law 94-142, (b) the Vocational Rehabilitation Act of 1973, (c) the 1978 amendments to the Vocational Rehabilitation Act (P. L. 95-602), (d) the Rehabilitation Comprehensive Services and Developmental Disabilities Act, and (e) the Carl Perkins Vocational and Technical Education Act (P. L. 98-524). These legislative milestones have asserted the rights of 36 million people with disabilities (and an even larger number of academically and economically disadvantaged persons) in this country to receive vocational education, rehabilitation, and special education services, as well as the economic support sometimes needed to achieve the goals of personal independence and meaningful, gainful employment.

Numerous advances in training technologies and educational strategies have emerged during the past decade and those developments could enhance opportunities for individuals with special learning needs to become successfully integrated into community residential, recreational, and employment settings (Johnson, 1988). Research efforts identified by Johnson (1988), which focused predominantly on the mentally retarded, have shown that many of these individuals can acquire the skills necessary to (a) obtain and maintain competitive employment (Wehman & Hill, 1979; Rusch & Mithaug, 1980), (b) use public transportation and function independently within the community (Certo, Schwartz, & Brown, 1975), and (c) accomplish complex assembly tasks (Bellamy, Horner, & Inman, 1979). Other research findings have demonstrated that there is an emerging technology related to job training and placement (Wehman & Hill, 1979; Rusch & Mithaug, 1980; Brown & Kayser, 1982) and that effective methods of individualizing and adapting vocational curricula have been developed (Wehman & McLaughlin, 1980). The actual participation of mildly- to severely-disabled students in business and industry settings also enhances relationships with community employers, which is essential to the development of post-school employment opportunities.

Federal attention focused on the transition of students from school to work and to related adult services has resulted from the fact that current educational practices have not effectively assisted students with disabilities to successfully gain access to appropriate adult services and employment opportunities. Shortcomings of current transition practices are reflected in the following statement taken from Section 626 of the Education for Handicapped Children Act Amendments (P. L. 98-199):

> The Subcommittee (on the Handicapped) recognizes the overwhelming paucity of effective programming for these handicapped youth, which eventually accounts for unnecessarily large numbers of handicapped adults who become unemployed and, therefore, dependent on society. These youth historically have not been adequately prepared for the changes and demands of life after high school. In addition, few, if any are able to access or appropriately use traditional transitional services. Few services have been designed to assist handicapped young people in their efforts to enter the labor force or attain their goals of becoming self-sufficient adults, and contributing members to our society. (p. 1367)

Section 626 also specifically addresses the issue of transitional services between school and the work force, as well as between programs in general education, vocational education, and special education, by authorizing grants and contracts to:

> Strengthen and coordinate education, training, and related services for handicapped youth to assist in the transitional process to postsecondary education, vocational education, competitive employment, continuing education, or adult services; and (2) stimulate the improvement and development of programs for secondary special education. (p. 1367)

This component of Section 626 suggests that roles and responsibilities of vocational educators, as well as special educators and general educators, should be expanded to provide adequate school planning and programs which enhance interactions between effective transition processes. Wilcox and Bellamy (1982) noted that education programs for students with disabilities should provide dual services focused on (a) preparation for functioning in future work and living environments and (b) successful transition into those environments. These services are related to educators' obligations to (a) develop locally appropriate curriculum content; (b) identify, recruit, and analyze training for work, independent living, and leisure skills; (c) conduct and monitor training activities; and (d) plan for the retention of students in programs that will enhance their transition from school to adult service systems.

Unfortunately, too little emphasis has been focused on the retention of special needs learners in postsecondary vocational training programs until those students have developed the skills necessary to successfully enter the work force. Indeed, this project is designed to explore motivation issues which, when identified, analyzed, and accommodated in a timely fashion, are likely to represent key factors that can be used to develop accommodation strategies that postsecondary vocational educators can use to reduce dropout rates and maximize at-risk learners' educational attainments.

Prior Efforts Focused on Issues Related to Motivation

Prior to obtaining employment or postsecondary training, several crucial events typically occur in the lives of students. Many of these events are tied to self-esteem and to other developmental psycho-social adaptations which influence individuals' readiness to accept the challenge to perform vocational and independent living tasks.

Related MRDC Research Activities. The results of on-going research at the University of Minnesota have clearly indicated that student retention and transition-enhancement activities which are contingent upon the identification and assessment of student attributes rely too heavily on measures of students' knowledge and physical attributes (Brown, 1987). Instruments and procedures for measuring students' attitudes and motivation attributes are inadequate and, essentially, nonexistent. This Symposium was conducted as the initial component of a long-term research effort designed to explore ways in which motivation-related assessment processes and accommodation strategies can be used to enhance the learning potential of special needs learners, and thus retain them in postsecondary vocational training programs until they successfully attain their training goals. Future MRDC research activities are expected to focus on the development, pilot-testing, validation, and implementation of these student retention and transition-enhancement activities.

Student Assessment Issues. Berkson (1978) noted that a revolutionary step was taken in the 1960s when the definition of retardation was extended beyond I.Q. level to include social adaptation factors. It has since been demonstrated that it is possible to construct rating scales that measure adaptation skills related to individuals' responses to social demands (Meyers, Nihira, & Zetlin, 1979). Meyers et al. also pointed out that environmental mediation represents an important aspect of the development of individuals' adaptive behaviors:

> "Adaptive behavior" at the very least refers to a subject's typically exhibited competencies in adjustment to the culture as expected for his/her age level, in or out of school. To be adaptive in behavior presupposes that one possesses the potential to be adaptive, but the degree and quality of actual behavior are not identical with potential. A child may be incontinent at age 4 because no one has assisted him. (p. 433)

Charlesworth (1984) cited research by Smith and Polloway (1979) which indicated that among 374 research papers published between 1974 and 1978, less than 10% reported producing any measure(s) of adaptive behavior by mildly-retarded individuals. This suggests that traditional psychometric and experimental approaches have often been more popular than less formal measures or observational methods. Thus, there seems to be a need to develop methods that adequately address the question, "What is the nature of the world to which individuals with disabilities should adapt?" Charlesworth (1984) noted that the most important problem in modern human research is the development of an empirical basis for comparative analyses of individual adaptations.

Sociobiologists typically attempt to explain social organizations as adaptations to environments brought about by behaviors influenced by genetic histories. Persons whose performance levels are often considered to be substandard in adapting to many aspects of our society, essentially are a social group that competes for and shares environmental resources (e.g., food, housing, employment, income, etc.). In addition, Charlesworth contends that we have insufficient data regarding retardation as a phenomenon both within and outside of family environments. Persons with disabilities, regardless of their handicapping characteristics, display biological, social, and psychological needs that are typical of all human beings. Thus, by recognizing that mentally retarded and learning disabled people have *a priori* needs and personal goals, our society can take an important step toward understanding such individuals and enhancing their transition into productive lives as meaningfully employed adults.

Assessing Motivation-Related Factors Among Special Needs Learners. Historically, motivational concepts have been discussed in terms of drive theories, incentive theories, optimal-arousal theories, and attributional theories. For the purposes of this publication, motivation is defined as "a state within individuals which energizes and directs them toward particular goals and which may be viewed as being both intrinsically and extrinsically reinforced." Extrinsic motivation is defined as stemming from positive or negative reinforcements which are external to specified behaviors, rather than inherent to those behaviors. For example, some students study because they are extrinsically motivated to get good grades, not because the act of studying is inherently enjoyable for them. In contrast, intrinsic motivation is assumed to be driven by incentives that originate within behaviors themselves, rather than externally. The desire to play a musical instrument for enjoyment is an example of intrinsically motivated behavior (Wolman, 1973).

Possibly one of the most familiar theoretical frameworks related to human behavior is Maslow's hierarchy of needs (1970). Maslow's theory presents a hierarchy of human motives that influence behaviors. Within this hierarchy the physiological needs are postulated to be the most basic, followed in turn by the need for (a) security and safety; (b) love, affection, and belongingness; (c) esteem, mastery, competence, and prestige; and (d) self-actualization. Maslow postulated that each level of need cannot be addressed and fulfilled until the preceding levels have been satisfied and provided for within each individual's life.

A more holistic and popular theoretical model of motivation is commonly referred to as the "organismic" theory, which assumes that individuals are active, volitional, and capable of initiating behaviors. Thus, specific actions of organisms are considered to be purposeful and goal-directed, as well as being the product of both innate and self-determined traits. Deci and Ryan (1985) contend that "...behavior is influenced by internal structures that are being continually elaborated and refined to reflect on-going experiences. The life force or energy for activities and for the development of internal structures is what we refer to as intrinsic motivation. Organisms' proactive natures, acting on both internal and external environmental structures, are attempts to develop unified selves, and viewed as dialectic processes whereby... human beings attempt actively to master the forces in the environment and the forces of drives and emotions in themselves".

Another popular contemporary theoretical view of motivation, The Theory of Cognitive Modifiability, has greatly expanded the understanding of the adaptive skills of people with mild disabilities. By introducing this theory, Feuerstein, Rand, and Hoffman (1979) introduced a viewpoint that is significantly different from the assumption that intelligence is static. Feuerstein et al. describe intelligence as being a set of processes of logical thought or cognitive functions called process variables. These process variables are a "...compound of native ability, attitudes, work habits, learning history, motives, and strategies" (Haywood, 1977). In addition, interactions between children and their environments serve as "mediating" influences that can have either positive or negative influences on the cognitive development of those children.

Motivation appears to be a critical component of cognitive functions. Arbitman-Smith, Haywood, and Branford (1984) cite several studies which have supported the belief that cognitive development is greatly facilitated by the development of intrinsic motivation systems. As children attempt to explore and to gain mastery over their environments, they also tend to develop differing degrees of tolerance of novel, complex, and/or difficult experiences (Switzky, Haywood, & Isett, 1974).

Observations of mildly mentally retarded and learning disabled populations suggest that such people are not substantially different from the rest of the population in terms of their needs to make choices regarding issues such as eating, leisure activities, and/or interpersonal relationships. Common patterns related to decision-making, problem solving, and choice of responses in social or work settings often are influenced by the early developmental experiences of individual learners. Thus, additional research should be conducted to examine factors related to self, family, neighborhood, and culture that reward reflection and careful strategy selection. Subsequently, multivariate correlation analysis of the information-processing dimensions could help us understand how people make choices among competing stimuli, problem-solving strategies, or possible modes of expression.

Siegel (1979) conducted a review of the literature from 1967 to 1977 to identify incentive factors related to motivation and the mentally retarded. That literature review suggests that numerous personality features have been identified: (a) failure avoidance (Cromwell, 1963); (b) extrinsic motivation to seek satisfaction in ease, comfort, safety, and security (Haywood, 1964); (c) being outer directed (Turnure & Ziegler, 1964); (d) external locus of control (Cromwell, 1963); and (e) punishment avoiders (McManis & Bell, 1968). Siegel suggests that a common theme in the research suggests that many special needs learners have an impoverished coping repertoire, are prone to experience failure, have little trust in their own resources, and, thus, often turn to their external environment for support. Such individuals often feel that they are pawns within their environments and this drastically reduces their motivation levels.

There is substantial evidence that suggests that the idiosyncratic nature of special needs learners tends to significantly influence their performance levels for a number of tasks. Early attempts to predict the success of persons with disabilities typically were directly related to the development of mental measurements, especially intelligence and social competencies. However, a few research efforts have been conducted that are more directly related to the focus of this project.

For example, the Laradon Hall Occupational Center in Denver, Colorado, conducted a four-year project to develop improved methods for evaluating and training young mentally retarded adults (1966). That project attempted to (a) establish how successfully employed clients differed from those who were not able to hold jobs, (b) develop a test battery that would assess whether or not retarded young adults were ready for general employment and what areas of functioning needed improvement, and (c) develop training and remedial techniques for the critical areas of functioning.

The results of the Laradon Hall Occupational Center Project were reported as being inconclusive and the project's test battery proved incapable of predicting clients' success. In addition, that project's methodology reflected the limitations of measurement and test construction methodologies used at that time. Since 1966, test construction methods and the knowledge base related to motivation and affective measures have become much more sophisticated and effective. In recent years the literature has included numerous publications focused on intrinsic motivation, attributional studies, learning and learned helplessness, and other related issues. This Symposium represents the first stage of a long-term effort to combine methods and strategies used in the measurement of metacognitive strategies, adaptive behaviors and competencies, as well as affective and motivational incentives, in order to better understand the real-world outcomes of special needs learners. Subsequent activities will attempt to synthesize practices and methodologies from recent years (in combination with new perspectives on special needs learners in specific educational settings) to improve the effectiveness of student retention processes.

Assessment of the Developmental Construct of Social Competence

Efforts to predict the success with which mentally retarded and learning disabled populations can make the transition into gainful employment have identified numerous factors and concepts related to assessment processes related to learner characteristics such as adaptive functioning, social competence, and behavior skills. Meyers, Nihira, and Zetlin (1979) conducted a literature review regarding the use of I.Q. scores and adaptive behavior measures as indicators of the likelihood that individuals will make successful transitions to working adult lives. Intelligence scores did not help identify or diagnose persons needing transition assistance. Adaptive behavior (AB) measures were used to measure everyday behaviors, instead of thought processes. Thus, AB is usually assessed by taking inventories of behaviors or by using third-party observations in relation to identified competencies. Essentially the long-term goals of this project are to determine (a) whether or not the nature of students' intrinsic motivation can be measured; and (b) if constructs, such as social competence, can be established as a set of competencies or traits that can effectively be used to retain at-risk learners within postsecondary vocational training designed to enhance their transition into the adult community where they can become members of a productive, diverse work force.

Potential Benefits of Appropriate Assessment Strategies

Wilson (1984) reported that an analysis of the outcomes attained by learning disabled (LD) high school graduates indicated that high school curricula can influence LD students' outcomes following their graduation. For example, LD students who have participated in vocational programs tend to be more successful at finding employment than those students who did not participate in such programs. Cooper (1984) found that mentally retarded (MR) students, or those who had received supplemental cognitively-oriented training, tended to have superior knowledge of learning strategies, when compared to those who had not received such training. However, there was no evidence that such training improved learners' retention of skills, knowledge, or recall of tools and procedures. Such divergent findings indicate that caution should be used when providing enhanced learning opportunities and support services for both MR and LD learners.

Target Populations and Existing Transition Efforts in Minnesota

Minnesota's recognition of the need for transitional services is demonstrated by the existence of the Interagency Office on Transitional Services which was formed within Minnesota's Department of Education to assist various state agencies and community programs to work collaboratively to better meet the needs of students with disabilities, as they prepare for their lives after high school. The Transition Office also is responsible for collecting data on existing transition services, including data related to vocational outcomes of graduates. In addition, the regional Comprehensive System of Personnel Development (CSPD) has identified the development of transitional services for students with disabilities as a high priority for inservice and preservice efforts. The Parents' Advocacy Coalition for Educational Rights (PACER), a state-wide advocacy organization, has received increasing numbers of requests from concerned parents about transitional services, as disabled youth currently served under P. L. 94-142 approach graduation with no clearly defined transition plans in place.

During the next decade, it is expected that approximately 5,000 to 6,000 students with disabilities will exit Minnesota's school systems each year. Approximately 86% of these students will be mildly handicapped. While the literature regarding issues and methods for transitional preparation and planning is steadily growing, Brown and Kayser (1982), Johnson (1985), Johnson, Bruininks, and Thurlow (1987) and Johnson and Thompson (in press) suggest that the development of improved transitional services has not been adequately addressed. Educators trained in vocational education and special education teacher education programs typically have received no formal transition-related training during their undergraduate programs. In addition, existing assessment processes are often inadequate or inappropriate for determining students' specific needs and abilities (thus, their degree of risk) as they enter postsecondary vocational training programs which could enhance their transition into the work force.

Implications for Postsecondary Vocational Education

The Motivation and Empowerment Symposium represents the first stage of a series of efforts to utilize motivation and empowerment issues and concepts to maximize the efficiency and success of efforts to retain at-risk/special needs learners in postsecondary vocational education programs and, thus, give them the skills necessary to maximize their transition into the work force and into meaningful adult lives. As intrinsic motivation concepts become better understood, it may become feasible to use these issues and concepts to develop retention strategies for at-risk learners, and, eventually, to train educators and personnel working for community agencies and business/industry to use these principles effectively.

Organization of Symposium Activities

This publication and related project activities were made possible by a grant provided by the MRDC and Minnesota State Board of Vocational and Technical Education. Project-related planning activities were initiated in November 1986, under the direction of James M. Brown, Associate Professor of Vocational and Technical Education, University of Minnesota. Coordination assistance was provided by Joseph Wotruba, project assistant.

National Symposium

A National Symposium on Motivation and Empowerment, held May 20, 1987, examined ways in which empowerment influences the retention of special needs learners in postsecondary vocational programs. Such potential members of the work force are proportionally representative of the wide range of constituents within our society. This Symposium was held on the St. Paul campus of the University of Minnesota and was designed to examine current trends and issues considered essential to the retention of students in postsecondary vocational education programs. It is very important that these factors be addressed by vocational educators in order to quickly and effectively identify special needs learners in terms of their pertinent learner characteristics and training and placement needs. In order to accomplish this objective effectively and efficiently, postsecondary vocational educators will need additional tools and procedures to identify a broad range of relevant learner characteristics that can be assessed to enhance the retention of at-risk special needs learners. Thus, this project has drawn upon the expertise of a wide variety of researchers, practitioners, and advocates, and will disseminate its research findings to an equally diverse audience. The following section presents a brief overview of the Symposium's topics and presenters. However, a thorough discussion of these presentations is presented in the second half of the publication and the actual presentations are attached in the Appendix.

Symposium Issues and Presenters

This project's Symposium brought together representatives of human resource programs, educational programs, and other selected community agencies in an effort to identify and analyze issues that effect the retention, training, and employment of special needs learners. In addition to formal presentations, the Symposium used a "structured problem-solving format" which encouraged participants to examine crucial factors related to the motivation and empowerment. This publication is designed to document the proceedings of this Symposium and to discuss the implications of the issues identified and recommendations proposed by participants. The second component of this publication by Professors James M. Brown of the University of Minnesota, and Paul Retish of the University of Iowa, reviews and comments on key Symposium issues and their potential implications for vocational educators in Minnesota, as well as elsewhere.

Specific Details of the Symposium and This Report

The Symposium and the development of this publication were managed by MRDC staff (with technical assistance from the Honeywell Corporation and its Handicapped Employee Council). Thus, this publication is intended to provide persons working with special needs learners with information that can enhance services in education and business and industry at the state, regional, and national levels. Symposium presenters were chosen after an extensive search conducted by MRDC project staff and Honeywell Corporation representatives. An attempt was made to insure appropriate representation of educational practitioners, client advocates, and agency personnel among the presenters, as well as audience participants.

In September 1986, MRDC project staff began communicating with Honeywell Corporation's Handicapped Employee Council regarding the development, promotion, and implementation of a national symposium focused on the issues of motivation and empowerment of special needs populations who are seeking postsecondary vocational training and training-related employment. The resulting symposium was structured as a one-day event including formal presentations, a panel discussion, and audience participation. The keynote speakers were Dr. Edward Deci (University of Rochester, Rochester, New York), and Dr. John Borkowski (University of Notre Dame, Notre Dame, Indiana). These speakers were selected based upon their extensive research and publication experiences related to motivation and metacognitive strategies. Another Symposium presentation was provided by Mr. John Hockenberry, who is a correspondent for National Public Radio, Washington, D.C. Mr. Hockenberry is well-known for his advocacy on behalf of persons with disabilities.

The morning keynote address by Professor Edward Deci provides a critical review of the literature related to key motivation-related concepts and strategies which promote learning and achievement, development of competence, self-determination, positive coping skills and personal adjustment, and related educational research on motivation. Professor Deci was followed by John Hockenberry who discussed his personal experience with the transition from being "able-bodied" to coping with a disability that resulted from a car wreck. Mr. Hockenberry also explored some of the weaknesses and strengths of rehabilitative services which he encountered.

Eight panel members, selected for their advocacy and expertise related to the employment of persons with disabilities, subsequently responded to Mr. Hockenberry's remarks. The panel members were Marge Goldberg (Associate Director of PACER - Parents' Advocacy Coalition for Educational Rights), Pat Beck (a University of Minnesota student with learning disabilities), Earl Brunberg (a Special Needs Supervisor with the Minnesota State Board of Vocational and Technical Education), Margo Imdike (a member of the Minnesota State Council for the Handicapped), Gordon Krantz (now a private consultant, who previously served on the faculty of the Educational Psychology Department at the University of Minnesota and later worked for the Minnesota Department of Public Welfare), Michael Erlichman (a lobbyist with the Minnesota Legislature), and Reed Wilke and Joan Orke (employees of the Honeywell Corporation in Minneapolis). A summary of the panelists' comments are presented in Appendix C.

The Symposium's afternoon keynote address by Dr. John Borkowski of the University of Notre Dame focuses on the concepts of metacognition (self-awareness about individual learning strategies and their importance) and empowerment (enhancement of individuals' ability to advocate for themselves or to give them the skills and ability to attain their goals), as well as these concepts' implications for efforts to provide vocational training for a wide range of special needs learners. This publication also contains a discussion of Dr. Borkowski's presentation by Dr. James Turnure of the University of Minnesota. In addition, a reaction to the total Symposium is presented by Professor Rupert Evans, Professor Emeritus of the University of Illinois at Urbana.

The second component of this publication by Professors James M. Brown of the University of Minnesota, and Paul Retish of the University of Iowa, summarizes the Symposium and offers conclusions and recommendations for future research and development efforts in this area of study, as well as comments about the implications for postsecondary vocational education programs. The papers containing the actual presentations are located in this publication's Appendix.

Dissemination Issues

Key issues that emerge when attempting to integrate contemporary approaches to motivation in education, rehabilitation, and business and industry are very complex. This publication highlights many of the major issues that have emerged thus far during project activities and examines some of the potential implications for Minnesota's postsecondary vocational education programs. It is hoped that this publication will encourage other researchers and practitioners to develop and implement policies and practices that encourage higher levels of self-determination among special needs learners as they pursue meaningful, productive careers throughout America. The publication and distribution of this document are made possible by funding from the MRDC. Copies are available from the MRDC upon request.

Readers are encouraged to express their reactions to this project and the Symposium proceedings by contacting Jim Brown at (612) 624-1214 or by writing to him at the Minnesota Research and Development Center, Room 460 Vocational-Technical Building, 1954 Buford Avenue, University of Minnesota, St. Paul, Minnesota 55108.

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CHAPTER 2

USING MOTIVATION TO ENHANCE THE EFFECTIVENESS OF POSTSECONDARY VOCATIONAL TRAINING PROGRAMS AND TO IMPROVE THE TRANSITION OF AT-RISK LEARNERS INTO THE WORK FORCE

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Paul Retish, University of Iowa

Introduction

This research project's efforts were designed to identify and analyze strategies and concepts that will potentially enhance the effectiveness and efficiency of postsecondary vocational educators' efforts to retain at-risk learners in their training programs. Such programs are designed to enhance those students' transition into the work force and into the adult community. Recent Minnesota Research and Development Center (MRDC) research findings have indicated that most transition-enhancing efforts analyze clients' cognitive and psychomotor attributes but fail to consider "affective" characteristics (Brown, in press; Brown & Kayser, 1988). In addition, the use of affective (e.g., intrinsic motivation) measures is essentially non-existent, and certainly seems to be inadequate to meet the needs of special needs learners within postsecondary vocational education programs.

It is hoped that measurement and test construction techniques have evolved sufficiently during the past two decades so that it is now feasible to develop and validate instrumentation for assessing intrinsic motivation characteristics in order to identify the unique learning needs of Minnesota's postsecondary vocational education students, as well as those elsewhere. This project's initial efforts, conveyed through the National Symposium and this publication, represent the first step of a long-term effort to develop transition-enhancing programs that will use intrinsic motivation assessment and modification strategies as part of the array of services that analyze and accommodate at-risk learners' educational needs. The following summaries of the Symposium's presentations contain a wide variety of concepts and suggested practices that can be implemented to enhance efforts to identify and accommodate at-risk learners in postsecondary vocational education programs.

Summaries of Symposium Presentations

Several nationally and locally recognized speakers contributed to the Symposium. The contributors' perspectives and the concepts they presented differ widely and that diversity contributes greatly to the insights that were produced by this effort. This publication summarizes the central issues identified during the Symposium. Subsequent MRDC research and development efforts focusing on at-risk students' motivation will benefit substantially from the conclusions and recommendations which emerged from this Symposium.

Edward Deci's Presentation About the Implications of Intrinsic Motivation

One of Deci's initial comments is that academic achievement is not the only meaningful educational goal, and that it may not even be the most important goal. He suggests that educators should also be concerned with individuals' adjustment and personal growth which represent affective types of educational outcomes. Thus, Deci sees typical criteria for judging the quality of educational programs as being too narrow and that educational goals (outcomes that standardized tests are designed to assess) are also too narrow. As a result, Deci recommends that we need multiple goals and multidimensional criteria which should include affective outcomes, as well as achievement outcomes.

Intrinsic motivation becomes especially important when we consider that when people are motivated by intrinsic needs (rather than by extrinsic controls or pressures), they are more involved with related activities and they tend to be more spontaneous, more creative, and more committed. Deci's model for relating intrinsic motivation to our nature as human beings focuses on three fundamental psychological needs, which are as follows:

1. The need for competence (the feeling that we have an effect on situations we are in). To facilitate students' intrinsic motivation levels, educators should provide learning experiences that are relevant and which represent optimal challenges.

2. The need for self-determination (autonomy, independence). When people are induced to do interesting things by offers of rewards, they will do the activities to get the rewards, but they tend not to persist if the rewards are terminated. The rewards seem to have a negative effect on their intrinsic motivation to engage in the activity (their willingness to do it in the absence of external rewards). Thus, the rewards seem to subtly undermine persons' sense of autonomy when their behaviors become dependent on the rewards and they are no longer self-determining. Unfortunately, we often take children who are highly intrinsically motivated and put them in situations where they are prodded and pushed to learn--with the promise of rewards. This approach may reduce their interest in instructional material, as well as their general intrinsic motivation to learn.

3. The need for relatedness (feeling connected or related to other people). Students need to know that teachers and parents are involved with their learning processes. In addition, students need to work with their peers on joint learning activities, since sharing work duties can increase their willingness to do work and can affect their feelings about themselves.

Deci's presentation also examines how educational outcomes tend to be related to the level of students' motivation. For example, when students learn after being introduced to material in a way that allows a greater sense of autonomy (thus, higher intrinsic motivation), they are more able to understand what the material was really about. In addition, Deci's research shows that students who learn material in order to put it to use show significantly greater conceptual understanding of the material than those who learn it to be tested about the material. Interestingly, those who learn in order to put the material to use also tend to spend a little less time learning the material than those learning for testing purposes. Finally, those learning material to put it to use tend to think the material is more interesting, enjoy the process more, and subsequently have a better understanding of it.

Deci also suggests that motivation affects how teachers teach their students, and thus influences the students' learning and adjustment. Unfortunately, teachers have a tendency to become more controlling when their students do not do well, lose interest, or get agitated or restless. This creates a negative cycle in which problem students cause teachers to become even more controlling, which in turn feeds this vicious circle in which students continue to do worse. Such cycles can also begin or be exaggerated when educational administrators pressure teachers to do more, and thus cause those teachers to become more controlling with their problem students. It appears that when students or teachers are pressured, either can sometimes be considered "at risk."

A Review of John Hockenberry's Comments

Mr. Hockenberry's presentation represents a somewhat informal examination of his experiences with the rehabilitation services system. He expresses a concern that the disabled population is too fragmented in terms of the services they receive and their interactions with society. In addition, people with disabilities tend to separate themselves professionally into groups: (a) those who work in rehabilitation institutions/agencies, and (b) those who are employed outside of rehabilitation-oriented settings. Mr. Hockenberry sees a fortunate trend in rehabilitation counselors' attitudes towards the types of careers that are feasible for their clients with disabilities. Such changes should be useful as we seek to encourage clients to enter increasingly higher-level professions in spite of their low self-esteem levels and the barriers presented by their disabilities.

Mr. Hockenberry suggests that persons seeking to improve the accomplishments of special needs learners should acknowledge the fact that our work force contains special needs learners who are competent, and they should be judged on the basis of their performance, not on the fact that they have been labeled as being in an at-risk group. It is important that subsequent generations be judged increasingly in terms of their potential economic productivity. Paternalism or altruism are no longer going to be meaningfully relevant.

Mr. Hockenberry suggests, therefore, that we are faced with meeting the following challenges:

1. We need to increasingly encourage and assist disabled people to pursue careers outside the rehabilitation industry.
2. We need to seek to eliminate society's tendency to put people with disabilities into labeled groups and to treat them as though they are all alike.
3. Job opportunities should be provided to clients that use their full range of abilities and interests, instead of underestimating their capabilities and being fearful of their emotional needs.

Summary of Panelists' Comments.

The following section describes major issues which were identified by panelists who responded to Mr. Hockenberry's presentation. Many of the issues have been abbreviated in order to focus only on key ideas. Readers are encouraged to refer to the appropriate sections of this publication for specific details.

1. It is difficult to help parents learn to use their own judgment about family members with special learning needs. They tend to follow the advice of institutional personnel that is often stereotypical and limiting for the clients.
2. People too often misunderstand the nature of what it is really like to have various types of special learning needs.
3. People need to understand that special needs learners' limitations are often only in certain areas and that they can learn to successfully compensate for those disabilities or can find job opportunities which are not affected by those particular limitations.
4. More special needs learners should be allowed to try to achieve their goals instead of being assured that their goals are unrealistic and unattainable.
5. Too many service-providing agencies and institutions are unable and/or unwilling to supplement other providers' services or collaborate jointly.

6. We need to pay attention to and plan for changes in what we are going to prepare people for, as well as how we are going to prepare them.

7. Even though we may not like taking orders from clients, maybe that is what we should be doing since they often have a better sense of what they want to do than we do.

8. We need to re-examine the broad spectrum of what our agencies and institutions are doing, and then determine which changes would be desirable to the general population, legislators, and especially to special needs learners.

9. Too many special needs learners are taught not to trust their instincts, but instead they are encouraged to listen to physicians, rehabilitation staff, and their families, and to blindly accept their opinions.

10. Too many students accept inappropriate advice and then believe that their subsequent failures are their fault; thus, their self-images become even more limited.

11. Efforts to enhance students' levels of self-empowerment and intrinsic motivation should involve efforts to be realistic, honest, and enhance service providers' management skills.

12. In recent years programs for disabled client populations have tended to shift away from an emphasis on persons with specific disabilities to persons who are otherwise generally intact. Many current clients tend to have problems which are more generalized, such as neurological problems or conditions related to limited general intellect or learning performance.

13. We have shifted away from being technical experts in client choices and the provision of services that facilitated "the pursuit of choices," to being "experts in training processes." Many now feel that we need to look more carefully at other dimensions of human beings in order to become more skillful at dealing with the human dimensions that go beyond the mere acquisition of particular skills.

14. Rehabilitation programs and society often condition clients to being "segregated."

15. Current laws promise people with disabilities that they will have equal opportunities and equal access to institutions, but those laws are not well enforced (similar to civil rights issues for Blacks during the 1960s). We are facing an issue of segregation versus integration.

16. Ultimately it won't be a matter of service providers' attitudes that will change conditions for special needs learners, it will be a function of the attitudes (e.g., self-empowerment levels) among client populations. As such people succeed in becoming more politically focused and organized, they will not have to depend on the attitudes of the rest of society and they will attain more of the opportunities needed to be integrated into society. Service providers can assist such efforts by encouraging and

assisting their clients to assert themselves (in spite of the obstacles presented by bureaucratic structures and agency/institution personnel and policies).

17. When we refer to self-esteem among postsecondary vocational education students with special learning needs (or anyone attempting to enter the work force), we need to stress efforts to make people stronger in areas that will enable them to survive in those training programs.
18. We need to determine how tough people need to be to work successfully in business and industry and to identify and develop the specific skills they will need.
19. Many employers would rather have job applicants with limited technical skills--but who have reasonable coping and political interaction skills. Most employers can teach employees technical skills but are unwilling or unable to take the time and effort to teach them to attempt to build their levels of motivation and self-esteem.
20. By 1995 the work force will be shrinking. There will be more competition for workers, as many new entrants into the work force will be minorities, and employers will be forced to develop and use the skills of a wider range of people (including high risk students with special learning needs).
21. Many special needs learners enter corporations but do not have appropriate or sufficient coping skills to identify career goals and successfully pursue them.
22. One of service providers' primary challenges is to help clients develop internal drives and skills to discover what careers they desire and how to achieve such goals.

A Summary of Borkowski's Comments on Empowerment's Implications For Vocational Training

Borkowski focuses on two themes: (a) how to develop skills (cognitive and vocational) in individuals with special learning needs, and (b) empowering at-risk learners to use their skills in challenging situations and to dare to develop new talents on their own initiative. Borkowski believes that we are failing to teach disabled students to use a sufficient variety of learning strategies in ways that will enable them to generalize those strategies to their work environments. For example, cognitive skill training should include explicit motivational components because the attainment of such new skills can elevate motivation and self-esteem levels, and thereby enhance the ability to adapt and modify old skills to changing work environments. This is supported by research findings that indicate that people with positive attributional belief systems consider themselves to be growing and changing in life-long processes when they find that they are able to acquire new skills. These changes help them to believe in themselves and produce an elevated sense of self-esteem.

Borkowski suggests that a thorough understanding of learning strategies is an essential first step when teaching people to be able to generalize newly learned skills to other applications.

Three instructional components can be combined to improve learners' performance: (a) strategy use, (b) attributional beliefs (intrinsic motivation), and (c) self-esteem (personality). Attributional beliefs and self-esteem seem to cause people to approach, rather than avoid, new tasks and, subsequently, to view those tasks as learning opportunities rather than learning obstacles. Under such circumstances people don't give up quickly on difficult tasks; instead they challenge tasks with all their resources and tend to be unafraid of potential failures.

Borkowski notes that excellent problem solvers use a strategy called "executive processing:"

1. They step back from a problem.
2. They think about what must be done.
3. They choose a reasonable way to approach the problem.
4. They monitor how well the strategy is working.
5. They try something else, if necessary.

People not currently applying the executive process can become better problem solvers by learning to:

1. Be more deliberate,
2. Deploy available cognitive resources more selectively,
3. Monitor how well their resources are working with individual problems, and
4. Revise their strategies, as necessary.

Fortunately, we can teach executive processing to many students if we use appropriate strategies to teach problem-solving behaviors. We should approach this task by (a) teaching strategies, (b) teaching higher-level guiding mechanisms to implement these strategies, and (c) teaching a belief system focused on self-efficiency that will encourage individuals to use such strategies on difficult tasks.

Borkowski also addresses the importance of the role that intrinsic motivation plays in learning. He agrees with Deci's conclusion that many school settings tend to decrease students' natural tendency to be intrinsically motivated. This tells us that many students entering vocational programs have already had their sense of self-competency and autonomy decreased by more than a decade of educational experiences. Borkowski recommends that postsecondary vocational educators should focus on rebuilding students' feelings of personal competency and also attempt to teach them the skills and techniques necessary to become more autonomous. Unfortunately, many schools' general lack of clear objectives about the use of clear learning strategies, in combination with the instability of many students' family conditions, make implementing good strategy-user models very difficult.

In order to apply these concepts to vocational programs concerned with the success of students' successful transition into the work force, the following four steps should be implemented:

1. **Recognize the need for training that will help students acquire feelings of competence and feel more autonomous in relation to their relationships with other people.**
2. **Teach students about transferring skills to new situations.**
3. **Enhance the appropriateness of students' effort levels, as well as their beliefs in the importance of these efforts.**
4. Teach students how to implement, monitor, and revise their strategies in a changing work place.

These four steps could result in increased "adaptability" and "toughness" (intrinsic motivation levels) among vocational education students with disabilities. Of course this strategy will be further enhanced if accompanied by a wide range of appropriate policy development and politically oriented actions designed to convince members of America's society to respect the talents of our emerging "diverse work force."

Key Points in James E. Turnure's Review of Borkowski's Presentation

Turnure's review of Borkowski's presentation was very supportive of the importance and appropriateness of Borkowski's comments and recommendations. It is very clear that Turnure's presentation promotes three key issues:

1. The development of a sense of trust is a precondition for establishing effective, basic communication systems.
2. Both a sense of trust and effective communication systems are prerequisites for nurturing positive human motivational and cognitive developmental processes.
3. When facing the complexities of an ever-changing work place, we need cooperation and communication as much, or more, as we need adaptability and self-empowerment.

Rupert Evans' Reaction to the Symposium

After all other Symposium activities were concluded, Rupert Evans gave his reaction to the events that he had observed. In addition to giving a very positive assessment to the nature of the Symposium and its successful examination of very important issues, Professor Evans made a number of concluding remarks. The following items represent a condensation of his comments:

1. A large number of special needs learners with whom postsecondary vocational educators work are not able to communicate what they want or need.
2. Several participants suggested that they had succeeded in spite of the nature of the assistance that they had received from those who worked to help them.
3. We need greater insights into how we should provide services to those persons who have severe learning needs and who are less articulate.

4. What issues should have been discussed at the Symposium, but were not?
   a. The needs, hopes, aspirations, and frustrations of those who are less articulate.
   b. The perspective of social anthropologists regarding people such as dwarfs, who face unique risks and barriers in educational programs, but sometimes deny it.
   c. What are some of the longer-term effects of segregation and of mainstreaming?
   d. How do segregation and mainstreaming affect the development of "relatedness to others"?
   e. What are some of the causes and effects of shifts from segregation to mainstreaming?
   f. Why are some community groups opposed to the establishment of residential home settings in which disabled persons can learn independent living skills?
   g. Who could best help us learn to predict and analyze the future regarding demographics, health care needs, and educational needs in terms of their effects on persons with disabilities and the persons attempting to assist them to become meaningfully employed?
5. The following are issues that Evans heard (or extrapolations which he produced) during the Symposium that are inherently in conflict or which may cause conflict when attempts are made to implement them:
   a. Deci said we need to provide optimal structure, while Hockenberry and the panelists said we are already providing too much structure for clients.
   b. Borkowski stated that teachers should assume that they should choose teaching-learning strategies for students, but he acknowledged that we need to begin to teach people to choose their own learning strategies.
   c. Misguided efforts to implement the same specific set of teaching/learning strategies for everyone in a learning setting is certain to be consistently counterproductive.

The Symposium's Implications for Postsecondary Vocational Education Programs

This project was initiated to explore ways to accommodate and retain special needs learners in postsecondary vocational programs and, subsequently, enhance their transition into the work force. Thus, this publication's final section will focus on the implications of the Symposium's motivation-related issues for Minnesota's postsecondary vocational education programs. As was true in other sections of this publication, many of the following conclusions and recommendations are relevant to a wide variety of vocational programs and activities which seek to vocationally prepare at-risk learners to successfully enter into the work force.

Student Assessment and Accommodation Efforts

This project has identified a wide variety of motivation-related factors which could be used to improve accommodations for at-risk/special needs learners. There is substantial support for efforts designed to enhance the identification and monitoring of at-risk learners. Efforts focused on the following issues could greatly enhance the accommodation of problems encountered by at-risk students in postsecondary vocational programs:

1. Postsecondary vocational education programs should assess students within the context of their educational environments which should include affective outcomes as well as achievement outcomes.

2. Assessments and resulting accommodations should involve educators, at-risk learners, advocates, and support service providers in the development, implementation, and evaluation of support services, instructional practices and materials, and related policies in terms of their utility within efforts to identify and retain at-risk learners.

3. Validated assessment instruments should be used to collect and analyze baseline data about students. The Generalizable Skills Assessments (Greenan, 1986) and the Satisfaction and Satisfactoriness Questionnaires (Brown, 1987) could be used to collect such data. Both instruments have been validated with adult learners in technical training settings, and are applicable to special needs learners. A learning style inventory could also be adapted/developed and used to determine how students prefer to take in information required to attain their vocational programs' learning objectives.

4. Assessment activities should be viewed as tools for facilitating student retention by developing and implementing strategies to determine students' motivation to successfully attain their vocational training goals.

Collaboration Efforts

Clearly, a wide variety of evidence suggests that postsecondary vocational educators should collaborate with a variety of other educators, agency personnel, and business representatives in order to identify and analyze key issues which positively and negatively impact efforts to enhance the training and employment of at-risk populations. These widely varying educators and support service providers should closely examine the four following areas that are closely related to employment conditions: (a) state and federal legislation issues and mandates, (b) the roles of business and industry policies and practices, (c) the roles of educators and education programs and policies, and (d) the impact of social changes and reform efforts.

Obviously, these aren't the only issues that influence the employment of persons with special learning needs. However, these conceptual areas do represent a useful framework for structuring future student accommodation efforts. Minnesota's postsecondary vocational educators are likely to conclude that policies and practices regarding the employment of persons with special learning needs must be implemented within environments that are far more complex than is apparent to casual observers. In addition, these issues are deeply intertwined with ethical and economic issues that mirror the complexity of our society. It is important that we seek to implement collaborative efforts at the local, state, regional, and federal levels. We should also examine redundancies and conflicting policies and practices among service-providing agencies, institutions, and government bureaucracies. Until we attain that goal, at-risk learners will be faced with the continuing need to unite and establish a political power-base that can enhance their integration into the mainstream of society and the work force.

Improving Programs' Cost Effectiveness

Recent research has led many to wonder whether the costs and effectiveness of accommodations for people who have special needs are effective or worth their costs. Researchers such as Mithaug, Horiuchi, and Roe (1985), Hasazi, Gordon, and Roe (1986), and Retish and Hitchings (1987) have shown that although many special needs learners have useful work-related skills and are work-ready, their employment levels are unacceptably low. Thus, the design and benefits of current practices should be closely scrutinized. When needed, new and/or revised placement strategies should be implemented to overcome these patterns of dependence and low employment levels.

Improving Programs for Youth and Adults in Vocational Education

Excessive unemployment and underemployment levels among special needs learners tend to be exaggerated by the extraordinary pressures on schools to teach the basics, to expand their emphases on standardized test scores, and to judge teachers in terms of how much their students improve in specified time periods. These conditions tend to justify concerns about Minnesota's postsecondary vocational training programs and the limited array of services available to persons with disabilities enrolled in such programs. This project and its activities are driven by an awareness of inadequate services and the belief that improved and expanded services and attitudes could improve success rates among special needs learners. Participants who attended the Symposium in search of new ideas, practices, and insights were clearly not disappointed when challenges to existing attitudes and practices in Minnesota were followed by suggested strategies for developing and implementing improvements. The Symposium produced comments suggesting that we should seek to improve current conditions. In addition, there are many new and emerging ideas that should be developed, implemented, evaluated, and disseminated to improve the retention of special needs learners in postsecondary vocational programs and their transition into the work force and meaningful adult lives.

Common sense suggests that we need to learn from both our mistakes and our successes. On-going efforts to revise curricula and programs in Minnesota's Area Vocational-Technical Institutes (AVTIs), recently renamed as Technical Institutes (TIs), offer an excellent opportunity to improve learning enhancement processes that could help a wider range of individuals succeed after they complete TI programs. Many Symposium participants doubted whether much of what is currently being taught is really helpful after special needs learners leave secondary school programs. Deci and Hockenberry both raised fundamental questions as to the goals of the educational system in relation to the needs of learners with disabilities. Deci referred to the 1960s as a time when control over learning was given back to the learners and was delivered in a manner which allowed individuals to use the information once they left school. Hockenberry pointedly talked about systems that cared for individuals rather than helping individuals to learn to care for themselves. These concerns should be given serious consideration during and after efforts to revise the curricular infrastructure of Minnesota's TI system.

Self-Empowerment as an Educational Goal

Questions about how components within our society are preparing students to survive as adults and the roles which education, agencies, and business/industry should play in these processes were asked by numerous Symposium participants. Panelists representing business and industry consistently stated that what they want from any employee is toughness (a self-empowered attitude) and the desire to succeed, not dependence on their employers or agency advocates. Employers do not have the time or other resources to worry about "caring for the handicapped." Business and industry representatives demand capable, productive workers and insist that their employees have the skills and attitudes necessary to carry out their assigned job tasks. Are these demands unreasonable? Far too many employers are hesitant about hiring disabled individuals who have been educated/trained by service providers with tendencies to encourage dependency instead of empowering them to cope with their environments as self-sustaining individuals. It seems imperative that special needs graduates of TI programs be taught success-oriented attitudes that will encourage them not to rely excessively on their support service providers after they graduate, as well as training them to develop meaningful, productive work skills.

Dependency and work success are quite interrelated. Dependency is also related to individuals' abilities to live and function on their own. Deci talked about the need to recognize the differences between extrinsic and intrinsic motivation. It seems likely that vocational education support services for special needs learners can easily make them dependent on external rewards and, thus, encourage such persons to be extrinsically motivated. When this type of dependence is encouraged and rewarded, many individuals become less productive workers and are more likely to encounter problems on the job and within their communities. Therefore, it is imperative that Minnesota's TIs shift from an emphasis on external rewards to internal systems which encourage students to become internally (intrinsically) motivated. The accomplishment of this goal will require new knowledge and techniques focused on intrinsic motivation factors.

The authors do not seek to "blame the victims" (i.e., individuals who have special learning needs), but seek instead to encourage students in vocational education programs to develop the attributes needed to be more in control of their own destinies. This goal is a logical outgrowth of the issues stressed during Deci's presentation. Therefore, TI personnel who teach, counsel, arrange financial assistance, etc., should seek to help students to work and live independently. Deci suggested that when people are more intrinsically motivated, when they are more autonomous and initiating with respect to the activities in which they are engaged, they tend to have higher levels of self-esteem, higher levels of perceived competence and more positive coping skills, all of which represent personal adjustment or personal growth. Although many people do not seem to consider this to be an educational outcome, this project's efforts seem to suggest that such factors may be as important as achievement outcomes. Deci indicated that one of the problems with support systems, as they now exist, is that they teach clients to be dependent rather than independent. Therefore, the importance of teaching vocational special needs learners to become independent is obvious, though such a goal will not be easily attained.

Unfortunately, the development of clients' independence and self-empowerment attributes to enhance their retention within vocational programs and their transitions from school to the work force is often treated as being less important than efforts to exert power and control in interagency relationships, or in agency personnels' efforts to prove their self-importance. In addition, many of the support systems that assist special needs learners also serve as the primary means of support for a large number of agency personnel and their families. Revising this philosophy, even in a limited fashion, could drastically change the nature of many agencies and the jobs performed by their personnel. Inevitably, however, problems associated with clients' versus agency personnels' rights should be recognized and analyzed before major system changes will become feasible.

Acknowledging "Real-World" Demands Faced by Technical Institutes

What other ideas or concepts can we use to guide future planning efforts for Minnesota's TIs? The comments of both Hockenberry and the Symposium's panelists seem to indicate that we should consider applying a "tough love" approach to training for those individuals who would benefit from such an approach. This strategy applies heavy doses of reality and is based upon an acknowledgment of what students need to succeed after leaving the shelter provided by the postsecondary vocational institutions and their support services.

Borkowski discussed three points which he believes interact to influence performance levels. The examples presented show how three components, (a) strategy use (cognition), (b) attributional beliefs (motivation) and (c) self-esteem (personality), combine to influence performance. Attributional beliefs and self-esteem can help individuals to approach, rather than avoid, various new tasks, and to view those tasks as learning opportunities rather than as learning obstacles. Instead of giving up too early on a task because it is seen as difficult, vocational education students with healthy attributional belief systems will "challenge" the task, because they will be motivated to utilize all available resources to solve problems and are unafraid of potential failures.

Implications for Subsequent Research Efforts

The authors wish to reinforce Symposium participants' beliefs that enhancing motivation and self-esteem levels, while also conducting realistic appraisals of society, will improve the retention of vocational education students in their training programs and thus enhance their successful transitions into the adult community after TI support services have been withdrawn. We should not be content with the limited effectiveness of methods being used today. Clearly, we should make more decisions based upon realistic assessments of the attributes needed by clients. Unfortunately, the necessity to change and adapt to societal complexities exerts the greatest hardships on those vocational students who have special learning needs.

"Students at risk" represent an extraordinarily important issue within Minnesota's TIs. In addition, the TIs not only have students at risk, they also have "teachers at risk." As many vocational educators encounter greater stress levels, they have difficulty expressing themselves within their job activities, and they become more likely to drop out of the TI system. Some of these people are outstanding teachers who could go into business settings and substantially increase their incomes. Those educators who have not encountered such problems personally should attempt to understand the impact of such conditions on their students and on their colleagues.

The principles of empowerment/self-esteem and intrinsic motivation that were consistently emphasized by Symposium contributors are directly applicable to vocational educators, as well as other agency personnel and business and industry representatives who seek to accommodate and/or advocate for special needs populations. The concepts of "team building" and "quality circles" which have recently become so prevalent in business and industry seem to offer useful strategies for improving the professional interactions of TI personnel and community support service agency personnel. In addition, vocational educators seldom see the final outcomes of their efforts, in terms of being aware of the long-term adult life experiences of students who have participated in their programs. Instead, vocational educators usually are only aware of students' in-school failures and the names of those who drop out. Perhaps vocational educators and community agency personnel should also be helped to become more aware of their clients' positive achievements and long-term accomplishments after leaving school. Minnesota's TIs need tenacious, competent personnel who have the tools and abilities to teach a wide range of students to be tough, independent, productive members of our adult society.

This problem can also be approached by stressing increasingly earlier interventions by special educators who can improve elementary and secondary curricula for at-risk learners by increasing the emphasis on efforts to build students' self-esteem levels and collaborate with vocational educators' efforts to develop students' job readiness skills. Such efforts should focus on the identification of students needing assistance and on the increasingly effective use of motivational strategies within the context of early development of readiness for the transition from school to the adult community. Vocational educators and special educators could easily expand their current efforts to develop work readiness skills and self-empowerment levels among students with disabilities. This would also offer an opportunity to confront many existing mental health issues such as depression, personality disorders, and neurosis.

Recommended Research Foci

The following items represent issues/emphases that should be examined by subsequent research efforts focused on motivation's role on the retention of at-risk learners in postsecondary vocational education programs.

1. Improved methods are needed for identifying students who are at-risk as they enter postsecondary vocational education programs, as well as during their training experiences. Assessments of student performance levels, as traditionally undertaken as a measure of success, are simply inadequate. Strategies for evaluating and monitoring

affective areas related to self-esteem, self-determination, motivation and satisfaction should be developed and implemented.

2. Postsecondary vocational education program instructors should also feel empowered to reduce increasing stress levels and burnout risks that result from their efforts to manage increasing levels of student diversity and learning problems. Staff development efforts should acknowledge and address this concern, as well as attempt to strengthen working relationships between classroom instructors and support services personnel and seeking ways to expand the numbers of support services providers and the types of services they provide.
3. The importance of team-building in staff development actions should be examined closely.
4. Interagency cooperation is vitally needed. Vocational education personnel need to plan collaboratively with outside agencies from which many at-risk learners tend to receive services. Today, many more students who enter vocational education are receiving services from a variety of community agencies (e.g., vocational rehabilitation, county social services, drug treatment, corrections, AFDC, etc.). Connections need to be made with these agencies to develop postsecondary training goals for individuals, as well as to enhance their efforts to make the transition into training-related careers in the work force.
5. New and appropriate service strategies and interventions are needed throughout Minnesota's postsecondary vocational education system. Vocational education has been preoccupied with making physical accommodations (i.e., wheelchair ramps, adaptive devices, etc.) for physically disabled students. Students are entering vocational education with many other problems, such as functional illiteracy, limited-English proficiency, and learning disabilities, as well as cultural and ethnical differences. Many of these students will continue to have difficulties as adults as they attempt to cope with job-related rules and job supervisors. We need better at-risk student identification systems, instructional methods, teaching strategies, individualized learning situations, and behavioral methods, and more effective student placement services.
6. Postsecondary vocational education programs and institutions should re-analyze and revise their missions to reflect the changes in the diversity of student populations. In addition, institutional administrative and program policies should be re-examined and updated. These needed policy changes should address issues ranging from recruitment strategies, intake and enrollment procedures, financial aids, the type and timing of counseling services, who places students in industry and how they are placed.

7. TI personnel need meaningful information on those students who drop out, why they drop out, what changes need to be made to reduce these trends, and who should be responsible for developing and implementing such efforts.
8. Future research, intervention studies, and policy development efforts should include an emphasis on the following areas:
    a. How can motivation attributes be effectively assessed?
    b. How can students' motivation-related characteristics be corrected, circumvented, and/or compensated for?
    c. What personnel within postsecondary vocational education programs are responsible for assessing and/or accommodating students' motivation-related problems?
    d. When is (are) the most effective and most feasible stage(s) within postsecondary vocational education students' programs to assess and modify their motivation traits, in order to retain more at-risk students who might otherwise drop out and/or perform far below their capabilities?
    e. Can motivation enhancement strategies be used effectively to develop at-risk learners' levels of self-empowerment in ways that will enhance their transition into the work force, as well as their long-term development of careers related to their vocational training?

Conclusions

This project's Symposium outcomes challenge all components of Minnesota's (as well as those elsewhere throughout the country) postsecondary vocational education system's student assessment and support service delivery system. These findings support the need to more effectively identify, analyze and accommodate the educationally relevant short-term and long-term needs of the total spectrum of the student population (present and future). In addition, the roles of educators and community agency personnel should evolve toward becoming increasingly compatible, including their funding processes and continuity of services to clients. Finally, it is crucial that incentives and disincentives impacting transition processes be analyzed by legislators and other policy makers, if at-risk learners' self-empowerment and self-determination are to play greater roles in their transitions into meaningful, productive, adult lives.

This research program's subsequent activities will focus on investigating how to assess and accommodate "intrinsic motivation" levels of postsecondary special needs learners who are at risk of failing to meet their vocational training goals. This will require improved linkages between assessment specialists, vocational instructors, and support service providers.

Hopefully, these linkages will also focus on transition-related efforts at the secondary and postsecondary levels, as well as those being conducted by a wide range of community agency personnel. Clearly, there is evidence supporting the need to continue this project's examination of existing motivation assessment and accommodation processes within Minnesota's TI system. Once the gaps and needs existing within the current range of assessment strategies have been identified, a comprehensive effort to develop and validate useful, feasible motivation strategies should be developed jointly by researchers and practitioners to address the issues and concerns identified in this publication.

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APPENDIX A

INTRINSIC MOTIVATION AND SPECIAL EDUCATION

By Edward L. Deci

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INTRINSIC MOTIVATION AND SPECIAL EDUCATION

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For the past few years in the United States we have heard a great deal about the issue of "quality in education." It is spread across the media, and a lot of noise has been made in Washington about the issue. When you stop to think about what is being said, it seems that quality in education is considered to be synonymous with high scores on standardized achievement tests (particularly the SAT) and that the concern is prompted by a fear that we are losing ground to the Japanese. Along with the descriptions of the problem have come proposed solutions, of course, and the ones that I have heard most frequently involve stricter discipline and stronger controls.

I, personally, am also interested in improving the quality of education, and there are many things that I think would help. But I think that much of what I have heard is completely wrong, both in terms of the criteria used for judging the quality of education and the proposed steps for improving that quality. What I would like to do today is talk about motivation in education, as it relates to this issue of quality in education.

Let us start with the fact that the primary criteria are scores on standardized achievement tests, particularly the SAT. Special educators work with many people who would not even be considered in discussions about the quality of education because SATs, and even standardized tests more generally, are not very relevant to this client population. So we see immediately that the criteria are too narrow, even if we were to agree that academic achievement should be the primary (or only) goal for education.

My own point of view is that academic achievement is not the only meaningful educational goal, and may not even be the most important one. I think educators should be concerned with individuals' adjustment and personal growth--i.e., with affective outcomes--as well as with academic achievement. In other words, I think not only that the criteria for quality of education are too narrow, but also that the educational goals--the outcomes that the standardized tests are designed to assess--are too narrow. What we need instead are multiple goals and multidimensional criteria, ones that include affective outcomes as well as achievement outcomes. And when you think about the quality of education in this broader way, it leads you to some quite different prescriptions. That is what I want to talk some about today.

Intrinsic Motivation

To begin, I want to introduce the concept of intrinsic motivation. Essentially what I mean when I say intrinsic motivation is that all of us, by nature, have three fundamental psychological needs that are intrinsic to our nature as human beings. And what we have found is that when people are motivated by these needs, rather than by extrinsic controls or pressures, they are more involved with the activity at hand. They tend to be more spontaneous, more creative, and more committed.

The first of the three needs is the need for competence. I believe that all of us, in our interactions with the world, have an intrinsic need to feel effective, need to feel that we are having an effect on the situations that we are in. This fundamental psychological need for competence, I think, can motivate a great deal of achievement-related behavior. The second psychological need that we all have is the need for what I call self-determination. You may think of it as autonomy, maybe even independence. To some extent everyone strives to be independent or autonomous in doing one's work and living one's life. The third need is to feel connected or related to other people. The paradigmatic version of that, of course, is love, but it is involved in many other types of interactions as well. Now, how can we structure situations so as to allow people to satisfy these basic needs while achieving learning outcomes?

The Need for Competence

First, let us think about the issue of competence. One thing we find when we look at people in either experimental settings or natural settings is that they tend to be drawn to activities that provide optimal challenge. The easiest way to turn people off is to give them something to do that is either too easy, so they get bored, or too difficult, so they get frustrated. If we can provide students with activities that are optimally challenging, given their individual capacities, they will typically be interested in the activities.

In addition to being optimally challenging, the activities should be relevant to individuals' lives. One thing that often happens in special education settings is that the activities available to students are not really relevant to their lives. I don't mean that as a general criticism, by any means, but it is important to think about the kinds of activities that we offer in special education classrooms or work places. To what extent do they have personal meaning or relevance to the lives of the people who are involved with them? Insofar as they have relevance and provide optimal challenge, they will draw people to them, and the people will be motivated to do them.

Once people have become involved with an activity, they need to know how well they are doing at it, so structures that provide this feedback are important to maintain a high level of interest. In many instances the feedback structure can be built right into the task itself, thus giving direct and immediate feedback. But for other activities it is incumbent upon the teacher to provide feedback that will be useful to the students.

Our research has shown repeatedly that meaningful, positive feedback tends to maintain or enhance intrinsic motivation and involvement with the activity. Insofar as people are doing poorly, then the feedback should focus on what is not working well and how it could be better. Giving negative feedback that is personally critical is the surest way to kill learners' interest and intrinsic motivation, and that is a particularly important point for the populations that most of you work with. These students have probably had a lot of failure experiences and a lot of negative, critical feedback. As someone said to me this morning, "A lot of these students have the expectation of failing."

Let me summarize, regarding the issue of competence. In order to facilitate our students' being more intrinsically motivated, we need to provide tasks that are relevant and represent an optimal challenge. Then the students need constructive feedback that either affirms their competence or helps them become more competent.

The Need for Self-Determination

I now want to move on to the issue of self-determination or autonomy. We have done a great many studies in which we have explored the effects of environmental factors on intrinsic motivation. Our central hypothesis has been that factors that promote self-determination will enhance intrinsic motivation, while those that restrict self-determination will undermine intrinsic motivation. Since we have found that people learn and work more effectively when they are intrinsically motivated, the implications of this research should be readily apparent.

Some studies have concerned the effects of specific events things like the offer of a reward or the imposition of a deadline. Many people think of these events as motivators, and in a way they are. But their effects on intrinsic motivation and persistence are, perhaps, counterintuitive. Some studies have been done in the laboratory while others have been done in the classroom and other real world settings. What we have found repeatedly is that when people are induced to do interesting activities by the offer of a reward, they seem to lose interest in the activities. To be sure, they are interested in the rewards, and they will do the activities to get the rewards, but they will not persist if the rewards are terminated. The rewards seem to have a negative effect on their intrinsic motivation for engaging in the activity, on their willingness to do it in the absence of external rewards. The reason for this, I think, is that the rewards are a subtle means of undermining their sense of autonomy. In a sense, their behaviors become dependent on the reward, and they are no longer choosing for themselves; they are no longer being self-determining.

This finding seems to me particularly troubling when you think about education. Little children are remarkably curious and spontaneous in their learning; they are highly intrinsically motivated to learn. Yet we put them into situations where we prod and push them to learn, for example with the promise of rewards. One wonders what effect that is having on their interest in the material, as well as on their intrinsic motivation for learning more generally.

Other studies have looked at the effects of deadlines and have found similar results. When people are given deadlines, even when the deadlines allow more than enough time to do the activity, the deadlines have a negative effect on their interest in the activity and their intrinsic motivation for doing it. After they have had an experience with the deadline, they are less likely to do the activity spontaneously. The same kind of thing happens with surveillance. Whether people experience surveillance directly by another person, or indirectly by a video camera, the surveillance has a negative effect on their intrinsic motivation.

There are a number of other events that have also been found to have the same negative effect. Threats of punishment, for example, and imposition of goals have also been shown to undermine intrinsic motivation. When you think about what these various events have in common, I think you will find that they are all used frequently to control people. Why do we offer people rewards for doing something? Why do we impose deadlines, or engage in surveillance? We do it because we believe the people won't do what we want unless we offer them a reward, or control them in some similar way. In other words, we reward people because we are attempting to control their behavior.

Now think about it. How do you like it when people are trying to control your behavior? You probably don't like it very much. And if you recognize the need for self-determination as a basic, intrinsic need, then it makes sense that you would not like to be controlled. When people get rewarded, when deadlines are imposed, when there is surveillance, they feel like they are doing the activity for someone else; they don't feel a sense of self-determination. This leaves them not liking the activity, and it decreases their motivation to do the activity. They are motivated to get the rewards, but they are not motivated for the activity itself.

These various studies have shown that many different events tend to undermine peoples' intrinsic interests. The flip side of the coin is related to events that tend to maintain or support people's intrinsic motivation. And the key element is whether the event tends to give them a greater sense of autonomy. For example, in one experiment, we offered people choices about the activities they engaged in. They selected three puzzles from the six that were available, and they decided how much of their total time to allot to each. These are the kinds of choices that can easily be offered in school or work situations. What we found was that the people who were offered the choices reported being more interested in the activities, and they displayed more intrinsic motivation for the activities than did people who performed the same activities without having choice. So one thing related to autonomy that we can do to help maintain people's interest and intrinsic motivation is to provide them with choices about what to do and how to do it.

Some of our research is focused on the fact that educators often want students to do things that the students do not like to do. For example, we might want them to be neat in doing an activity they find fun, or we might want them to organize their materials in a particular way. In one experiment little children painted pictures, an activity that they love to do. The experimenter then asked them to be neat about it, for instance to wash out their brush before changing from one color to another. The activity itself was an interesting one, but the issue was how to set limits on the activity in such a way that the limits would not have a negative effect on the children's interest levels.

There are a few things that turned out to be important. First, it helped to tell the children, in terms of real consequences, why the limits were being imposed. "Do this because I said so" is not a reason for the limits; it is simply an attempt to control. The real reason for asking children to be neat, for instance, might be so the materials would be nice for the other children who will also be using them. That is a real explanation, with meaning for the children. The first point, then, highlights the importance of being clear and honest about why it is the limits are being set.

Second, since students may not want to do what they are being asked to do, the request can create tension for them. It is important therefore, when setting limits, to acknowledge that people might not want to follow them. In the study mentioned above, the experimenter acknowledged to the children that it is sometimes fun to be sloppy with paints, and this helped to decrease tension and pressure to conform. In turn, it lessened the negative effect of the limits on their interest and motivation for the activity. The acknowledgment conveyed that these two seemingly conflicting ideas, "I want to be messy" and "I need to be neat," can harmoniously coexist. They can want to do one thing and decide to do another for the reasons explained to them. In short, acknowledging people's conflicting feelings helps to maintain their interest and intrinsic motivation for the activity.

To summarize, we have found that the specific events of offering choice, explaining the reason for a request to do something, and acknowledging conflicting feelings are all helpful for maintaining or enhancing intrinsic motivation. And this occurs, I think, because they allow people a greater sense of self-determination or autonomy.

Classroom: Autonomy Versus Control

In other studies that were actually done in public school classrooms, we explored the general context or climate as it affected students. Again we considered this continuum from controlling the behavior to supporting the autonomy of children. We found that in classrooms where teachers tended to support autonomy, students were more intrinsically motivated, had higher self-esteem and felt more competent in school-related activities than students in classrooms where teachers were more controlling. Furthermore, in following these students over the year, we found that the effects of the teaching climate had shown up within the first two months of school. We measured students on the first or second day of school and then again a couple of months later. Within the first two months the effects had already appeared. Controlling children seems to leave them less motivated for their school work, and also feeling less good about their school work and about themselves as people.

There is a system in New York State called BOCES, the Board of Cooperative Educational Services, that has learning disabled and other special population students. Within that system we have recently collected data from about 325 students; about 55 of them are high school students in the vo-tech program. The data we collected from the vo-tech students (as well as the BOCES students) generally show the same kinds of things that we had previously found in public school classrooms. We asked students, for example, to fill out questionnaires describing the educational settings that they were in, again using the same continuum ranging from autonomy support to control. We found that when these vo-tech students experienced their educational context as supportive of their initiatives and their autonomy, they were more intrinsically motivated for learning. They said learning was more fun and interesting; they had a higher level of self-esteem and they felt better about their school work. Furthermore, they had more positive coping skills.

Students who found their educational setting more controlling tended to blame and project when they failed at something, and they were more anxious. When they failed, they tended to amplify their anxiety.

The Need for Relatedness

So far I have focused on the needs for competence and self-determination, and I have made the point that in order to encourage intrinsic motivation, learning environments should provide an optimal amount of challenge and positive feedback, and also support for the autonomy and initiative of the people in those situations. It is also important to take into account the need people have for relating to others. In fact, I suspect that this is especially true in special populations because many special needs learners do not have the kind of involvement and support at home that they need. As a result, a greater burden is placed on teachers and other people who work with these children in the educational setting.

We asked vo-tech students to what extent their teachers provided warmth, and we found that this was related to variables like self-esteem and perceived competence. Furthermore, we asked students questions about their home situations. For example, we asked whether, when they get home at the end of the day, their parents talk to them about how things went for them in school that day. This kind of thing makes a big difference. It seems to be an indicator that parents are interested and involved, and when they are, kids are more motivated, feel better about themselves and in general do better in school. As I said, the same is true for teachers, and sometimes teachers have to go the extra mile because students are not getting the attention they need at home.

Teachers and parents, then, should be involved with the learning process; students need to feel that their teachers and parents are involved with the learning process. In addition, students' need for relatedness applies not only to significant adults, it also involves their peers. And this is very important since it allows us to structure situations so that students can work together on learning activities. Sharing the work may increase their willingness to do the work and may ultimately affect their feelings about themselves.

In short, within all of the populations we have studied, we have found that this network of variables seems to cohere. When people are more intrinsically motivated, when people are more autonomous and initiating with respect to the activities that they are engaged with, we find that they have higher levels of self-esteem, higher levels of perceived competence, more positive coping skills; all the things that for me represent personal adjustment or personal growth. And although a lot of people do not seem to care about this as an educational outcome, I think it is every bit as important as achievement outcomes.

Intrinsically Motivated Learning

What I have done thus far is focus on the contextual factors that affect children's intrinsic motivation. Now I want to move on to the relationship between intrinsic motivation and learning. In other words, what are the educational outcomes that relate to the level of students' intrinsic motivation?

We have done a number of different studies in which we have tried to look at actual learning outcomes with respect to these concepts of intrinsic motivation, self-determination, and autonomy. In one study, fifth-grade students learned some grade-appropriate material. Each child learned the material under one of three different sets of conditions. Some learned it so they could take a test on it, some were simply asked to read and learn it without any mention of tests or why they should learn it, and some were asked to read the material so they could tell how interesting they found it. For the last group, there was no mention of learning. The first set was a controlling extrinsic learning set, and the second was a more intrinsic learning set. The third is referred to as a spontaneous learning set, since these children were not even asked to learn the material.

After the students read the material they were all asked the same sets of questions. These were of two types: Some tested rote memorization and others tested conceptual understanding. This test was given immediately after the students read the passages. Then, without their expecting it, an experimenter went into the classroom about ten days later and said, "Remember last week when you were sent out of the classroom with the woman and read some stories? I'd like you to think about those stories again, and I would like to ask you some questions about them." The idea was to see how much the students had retained when none of them had been asked to retain it, and none had a reason to feel that he or she should remember it.

The results showed, first, that the controlling (test-focused) condition was useful in terms of rote memorization. The students who learned in order to be tested memorized more than the other students. By several days later, however, this advantage had disappeared; they remembered no more than the others. They learned it in order to pass the test, so when the test was over, out it went.

What about conceptual understanding? There we found very clear differences. The people who learned in order to be tested showed less conceptual understanding of the material than people who learned without a specific controlling set. When they were introduced to the material in a way that allowed a greater sense of autonomy and thus more intrinsic motivation, they were more able to understand what the material was really about. This was true for the intrinsic group, and also for the spontaneous group.

In another study, with college student subjects, we also considered rote memorization and conceptual understanding. In it, half the students learned the material in order to be tested and the other half learned it in order to put it to active use. Sure enough, what the experiment showed was that those people who learned the material in order to put it to use showed much greater conceptual understanding of the material than those who learned it to be tested. We asked them to keep track of how much time they spent on learning the material, how much time they actually spent reading it. We found that those people who were learning in order to put the material to use spent a little less time with it than those who were learning it in order to be tested. So it was not that they understood it better because they spent more time on it. Instead, they understood it better because they had a different orientation toward the material. Motivationally they were more intrinsically motivated. In fact, we asked them questions about how interesting they found the material, how much they enjoyed participating, and so on, and we found very clear differences. Both groups read the exact same thing, but those who learned the material in order to use it thought it was more interesting, enjoyed the process more and subsequently had a better conceptual understanding of it.

This seems to be particularly important for the types of clients that many of you work with. If we can structure the situations so they learn the material in order to use it in some way, so that it has meaning to them in terms of their lives, then there is a real possibility for improving their conceptual learning.

Educational Outcomes

I started by saying that there are two kinds of educational outcomes that are important to me. One is achievement broadly defined, beyond just the SATs or standardized achievement tests, and the other is personal adjustment. Both are important educational outcomes, and we have found repeatedly that those situations that support people's autonomy and initiative, that give them choices, that have other people involved with or relating to them, and that provide the structures that allow them to feel competent, are the situations that promote intrinsic motivation and in turn promote greater conceptual understanding and better personal adjustment.

When it comes to vo-tech and special population students, you will find that they have had a lot of failure experiences and are not involved in the educational system in quite the way that typical children are. The way they relate to education is different because they have had different kinds of experiences with it. So all of these principles that I have been speaking about seem even more important for these students.

Teacher Motivation

One of the things I have been looking at recently is not only children's motivation but teachers' motivation. It became clear to me that some point, in an anecdotal way, that teachers' motivation for teaching has an impact on the way they go about teaching students, and thus affects their students' learning and adjustment.

I have been interested in why some teachers tend to be very controlling in the way they work with children, while others tend to be supportive of autonomy. Part of it, of course, is a matter of personality differences; some people have more controlling or authoritarian personalities than do others. But beyond that, we have focused on the way situations affect teachers' styles and motivation for teaching. First, we have found that when students do not do well, when students lose interest in the material, when students get agitated or restless in educational settings, teachers respond by being more controlling. Teachers apparently feel pressure or tension from the fact that students are not involved and interested in the material, and they respond by becoming more controlling with the students. This, of course, creates a negative cycle in which problem students who are having difficulties with learning prompt teachers to be more controlling, which in turn leads students to do still worse.

Administrators and parents probably have trouble with these students as well, and they, also, probably become more controlling. They have a kind of involvement with students that is critical and negative rather than supportive and positive. When students are not doing well, we tend to respond by giving them the exact opposite of what they need. I think we, ourselves, lose patience, so we are not able to provide the kinds of structures and supports that will work effectively.

The other thing that our research has shown is that when administrators in educational settings begin pressuring teachers to do more, those teachers tend to become more controlling. So when something happens at the level of the federal government or something happens in PTA meetings that leads administrators to pressure teachers, the teachers tend to become more controlling with their students. Standardized curricula tend to have a similar effect, I think. They limit teachers' autonomy and that leads teachers to be more controlling with students.

We did a simple experiment to explore this general issue. We had subjects teaching other subjects how to solve problems. We worked with the "teachers" one at a time, giving them an opportunity to learn the materials they would be using, providing a list of hints, and explaining the situation. For half of the teachers, however, we said that it was their responsibility, as the teacher, to see to it that their students performed up to high standards. That's all we said, one simple sentence. Then we tape recorded the teaching sessions so we could analyze them. The results revealed that the teachers to whom we had mentioned performance standards spoke three times as much as the other teachers. And it was not only that they spoke more; the quality of their speaking was different. They made more commands; they used more controlling words like "should," "have to" and "ought to." These teachers had apparently experienced our instruction as pressure, and they got more controlling with their students. What happened with the students? Well, when teachers became more controlling, students assembled a lot of puzzles because the teachers told them the solutions. The students assembled five times as many puzzles, but they solved only one-fifth as many. The distinction I am making between assembling and solving is that solving means doing it independently, figuring out the solution for oneself, whereas assembling means putting the pieces together as someone says how to do so. I believe that it is through independent problem solving, that one comes to understand the process of problem solving. It is not through the rote assembling of puzzles or the rote solving of problems that one learns problem solving.

This is an interesting matter. Some people would look at the one group and say, "Isn't it great? They put together five times as many puzzles." But I would ask, "What were they learning in the process of putting them together?" It is the other students who actually assembled fewer puzzles but solved more of them who had the more useful experience; they are the ones who were learning at the conceptual level.

Conclusions

So I make these comments as a way of speaking to you as individuals, you who are teachers or administrators, you who work with special populations. I think these issues affect you directly, both in terms of how you feel and how you motivate your students to learn.

I have been doing a number of teacher workshops lately and have encountered a lot of emphasis on "students at risk." That is one of the current buzz words, and it is an extraordinarily important topic. One of the things I am finding, however, as I go around to different school systems, is that we not only have students at risk, we also have "teachers at risk." The more they are feeling pressured and the more they are having difficulty expressing themselves as teachers, the more likely it is that we will lose them. And some of these people are very good teachers who could go into a business setting and make half again as much money. I don't know how that resonates with your own experiences, but even if you do not feel it in yourself, perhaps you can understand the general principles that are operating.

Well, let me leave it at that and just mention that 11 of these ideas are presented in much more detail in the book Intrinsic Motivation in Self-Determination and Human Behavior that I recently wrote with Richard M. Ryan (Plenum, 1985). Thank you all very much.

APPENDIX B

EMPOWERING PEOPLE WITH DISABILITIES

By John Hockenberry

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EMPOWERING PEOPLE WITH DISABILITIES

Address by John Hockenberry
National Public Radio, Washington, D.C.

Introduction by James M. Brown, University of Minnesota

I'm very pleased to introduce our speaker, Mr. John Hockenberry, who previously served as a Midwest correspondent for National Public Radio and now works in Washington, D.C. If any of you happened to hear All Things Considered on National Public Radio two nights ago, you heard John co-hosting that program. This morning John is going to be talking about problems that people with disabilities encounter in the workplace and how their attitudes can inhibit or empower their efforts to pursue meaningful careers. I'm sure that John will provide additional facts about himself that he deems necessary before he begins.

Mr. Hockenberry's Address

I don't know whether I would compare this to an oral defense of a dissertation, a homecoming, or what. It's been almost 13 years since I left the rehabilitation hospital in Grand Rapids, Michigan. I guess that's my graduating class, since disabled people often remember (with varying degrees of enthusiasm) fondly of the times and the friends that they developed in the institutional setting. Yet, I also had experience at a facility in Williamsport, Pennsylvania, which had a very different philosophy at the time than the Grand Rapids facility.

I am not someone who knows a lot about institutional issues and I think that that is a deliberate decision on the part of the people organizing this conference. I have been out of the institutional and rehabilitation environments for quite some time. That, I think, says a lot about the ability of rehabilitation professionals to reach people who are succeeding in the professional world, perhaps by accident, or perhaps by their own design. It also says a lot about my crazy life too. So, I will hope that you would consider me as a user of rehabilitation services and probably a user of rehabilitation services from a previous generation.

There's been much change since I left the institution more than a decade ago, and I hope that some of the arguments that were flaring then have been resolved. What you find among people who are out in the work force, and I'll be fairly candid, is that the disabled population is a fairly fragmented group for a whole lot of different reasons. If you go to Berkeley, California, for instance, and are paraplegic, you're lucky if you can find a parking space, because being a paraplegic doesn't count in Berkeley. You have to be at least a quadriplegic to be considered disabled at all, and preferably have an iron lung or something like that to deserve special parking privileges. This has to do with the changing population and the fact that needs of people with varying physical problems are reflected politically, emotionally, professionally and socially. If you're talking about perceptual disabilities, again, a whole different set of issues emerges; thus, persons with disabilities are a fragmented population.

The other thing is that there is a cleavage in the disabled population along professional lines, strictly professional lines, that I've certainly noticed. For the first few years after I came out of the institution, I worked in another institution. So it's hard for me to specifically date my departure from the institution setting. Indeed, when I was an orderly at a rehabilitation facility in Oregon, when I was a trainer and a behavior modification programmer at a facility in Oregon, I sometimes wondered who was helping whom. I imagine that this is a problem for people on the floor-staffs that you deal with. Working in rehabilitation is a very interactive phenomenon and people who presume that their independence is represented by a paycheck, may discover that their independence is quite a bit more complicated than that. I yearned, in any case, to get out of the institutional setting entirely and only felt satisfied that I was employable, and perhaps rehabilitated, by finding an integrated way to have a disability and also be employed outside of the institutional setting. That was about seven years ago when I started working as a reporter.

My experience, both in the institution and out of the institution and among rehabilitation services of all kinds was not entirely a happy one. It disturbs me that in my case, because of a lot of motivational advantages that I had, because of my family, and because of, I don't know, just some things and ways with which I approached my injury, that there were things that led me into the independent work force. I cannot give credit, necessarily, to my institutional history as helping me to achieve that. I think it's disturbing. I think it's great that I'm employed in this business. I think it's great that National Public Radio has installed those convex mirrors in the corridor intersections to prevent me from breaking ankles with my wheelchair. I think it's good that they've also learned that someone who is disabled can be a reporter and be someone who is every bit as competitive as everyone else in the office. I think they also understand that it is important to have the perspective of individuals who are different, whether they are Latin, whether they be Black, whether they be female, or whether they are reporters from a newspaper in Managua that doesn't report for the American Press. Varying perspectives are important to any news operation. I certainly bring my unique perspective and there has been no resistance to that on the part of National Public Radio.

However, it is disturbing that by a fluke I ended up in this profession. I do not believe that if 10 or 11 years ago I had said to my vocational rehabilitation counselor that I wanted to be a reporter, she would have had any related help for me at all. We are at a very interesting stage in rehabilitation. The generation that I am in is ending, in that there are a lot of people doing a lot of different things as pioneers; there are a lot people who are now firsts. It's time for the second and third generations to come along. There is a certain advantage for people who are first, if they are motivated in the way that I am motivated and have the advantages that I have had. It's exciting to be first at something. It's exciting to be sort of a pioneer, and many disabled people are able to perform that function and it's a very good thing for them. It's a much more challenging situation when increased numbers of professions become options, simply because people like me and other people in all sorts of professions have been moving into the work force. How do we motivate people to get into professions in spite of all the blocks of low self-esteem and radical changes that are implied by disability? We should develop the attitudes that they're not hot shots, disability is no big deal; there are disabled people in the workplace who are competent, and there are disabled people in the workplace who are incompetent and have to be judged on that basis. As the second and third generations of persons with disabilities mainstreaming enter the workplace, decisions will be made more and more on an economic basis. The paternalism of "We need to do this because it's great," or "It gets on P.M. Magazine," is no longer relevant.

This is the real challenge. And I don't know if I'm confident that these options will assist disabled individuals to be matched into professions that are outside the rehabilitation industry. I feel many challenges still need to be met, and I presume this is the natural agenda as we move into the next phase of rehabilitation. I also presume it's something that you have to deal with, in that so many people who come into rehabilitation settings now are already equipped with models on the outside of athletes, of people that they want to emulate, as opposed to providing all of that imagery in my case for the clients in the hospital to wake up. The image of a marathon runner on the front cover of a Wheaties cereal box is as significant as anything that you can do on an individual basis or that any medical technology can do to assist people to look and feel better, and live longer. So, it's a very exciting time and it's sort of a sad time to be disabled in the sense that it's the last era of "hot shots."

The other thing that I wanted to mention about my particular case is that it identifies the fragmented nature of the disabled population and of the problems that we deal with. I think the general focus of this talk is that "if you pigeonhole people you've got pigeons, and whether you have useful, productive people in society is quite another question." In my case, that is what I discovered when I was in the institution. Of course, all paraplegics are put in the same room or all the spinal cord injuries are put in the same room, and we all identify each other in terms of the number of times our car rolled over or that we got drunk and ran into a tree. "Hi, hitchhiking and ran into a tree." Once you get through that sort of identity you begin to look for other ways of distinguishing yourself from your fellow "cripps" and that takes all kinds of forms (the number of wheelchair push-ups you can do in the hospital, the time it takes you to get out of occupational therapy, the amount of times you get out, the number of girls that come to see you). There are all sorts of rivalries that take place in a very intense setting like rehabilitation hospitals.

But as you leave the institution you have to come up with some legitimate ones and you begin to learn about how you are coping; you begin to identify things that are very unique to you and you have to be able to learn from those lessons. For instance, I wondered for years and years and years, and battled for many months with rehabilitation staff about an issue while I was there. First of all, at Williamsport General Hospital where I had my acute care, I was immediately gotten up after a decompression laminectomy, a T-5 spinal cord injury decompression laminectomy, was put in a brace with no spinal fusion, and was up on a tilt board the next week. This was considered medieval quackery by the people at Mary Freebed Hospital, something which I was very sensitive to. I understood that I was very different from my colleagues, in that my doctors and my parents had made it known that they were not about to give me a spinal fusion, put me into a body cast, and tell me to lay around for six weeks. They wanted a treatment program that was different from what was typically going on at that hospital. Believe me, nurses don't like to take orders from patients, and that was the position that I was in unwittingly. I didn't know, I was just sitting there introducing myself, rolled over twice and burst into flames. I was having a good old time. But the tension on the part of the staff providing my care was something that was very, very noticeable.

In addition, partially because of the style of care at Williamsport Hospital, I was very enthusiastic. I remember lying in the hospital on Demerol, which you can do endlessly, and imagining getting on the Chicago Transit Authority elevated trains. Oh, it's simple, I would think, just lying there, my mind bent out of shape on Demerol, I'll just fold the chair up and put it over my head and bump up the stairs, it will be great. It will probably attract a crowd but after a while they'll get used to seeing me do this. Typically, elevated train entrances and stops have about two dozen steps and they're metal - and I don't know of many fabrics that can make it up three of those steps. God knows what I would look like if I got to the top, but at the time this was how I was going to get around. The staff of the hospital all interpreted this as denial, and not denial in some casual sense. But it was denial in some way. But the staff at Mary Freebed, the vocational rehabilitation staff, said this was denial (i.e., "he's going through the denial stage and we expect him to be out of the denial stage in a couple of weeks"). So, everything I said was felt to be denial, and my parents were encouraged to distrust my happiness, enthusiasm, whatever it was, which really has persisted throughout. I don't know, maybe the denial will end during this session here.

What happened next, I've forgotten. But my parents were very frustrated in dealing with it, and were actually accused of being complicit in my denial by being involved in this

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enthusiasm and listening to my stories about how I was going to get on Chicago Transit Authority (CTA) trains. In terms of how a story like that gets converted to disillusionment, I was in P. T. (physical therapy) and I would bug my P. T. (physical therapist) about this dream that I had about getting on the CTA trains and she said, "Yes, aha, John, yes, right John, unhuh, right John," and on one Friday, she said "OK, I have a little experiment for you" and she brought these two little Fisher Price baby stairs over to me and said, "Alright, get on. Imagine there's a train on the top of this little wooden set of stairs." I pushed and shoved and pushed and shoved and pushed and shoved and pushed and pushed and shoved and sweated. Suddenly it was me and those stairs and there was no hospital and there was nothing else. When I got to the top, I realized at that moment that I wasn't going to be getting on the CTA trains. I don't know if that's denial or not, but from that moment on I knew exactly what had to happen and it was something that, of all the things that happened to me in the rehabilitation hospital, that was the most real, the one experience that I've never forgotten. And it involved two things: It involved the therapist saying to me, "Well, this is plausible," and it involved her saying, "Try it," in a completely open-ended way. Nothing else that I had experienced at the institution was given in that way - try it and this is plausible. There were always formulas, and I remember I made a mistake one time of saying to my vocational rehabilitation trainer at a facility called Pine Rest, in Michigan, that I was a mathematician at the University of Chicago, which is what I was studying when my school was interrupted. I did intend to go back and I was interested in math.

As a result, I was asked to spend a week doing 12-number column sums on a six-key adding machine, and there was no way to tell the staff in a neutral way that this is not what I was talking about when I referred to mathematics. "Do you have any integrals I could do, is there any calculus in this book?" I am not trying to be arrogant about it, I don't have any problem with column sums, it's just not mathematics. There's a letter in my file that followed me around to college which indicated that I was untrainable, which actually may be true. But the letter claimed that I was too arrogant and was not suited for a professional setting and that I would need help for years and years and years. It was very clear to me and I understood that what began as a fairly simple rehabilitation exercise, a fairly straight-forward set of tests, became a monumental personality conflict between me and that particular rehabilitation staff person. I mean, I was bored; I was spending the summer in a hospital and I was scrappy, which is fine. But the thing that was most disturbing was that the staff were not accustomed to coping with personality issues in their dealings with disabled individuals. They were used to a consistent level of submissiveness, they were not able to imagine clients having their own ideas. And that's not the fault of rehabilitation facilities; there are lots of institutions that have that problem.

But you're dealing with a very impressionistic population and you should realize that the whole personality and soul of an individual is reborn after physical rehabilitation. Everything you say is the Declaration of Independence, is the Constitution, in terms of its potential impact on that individual. Also, some clients have letters that follow them around in their files saying that they're completely inappropriate for many jobs. If it hadn't been for Mount St. Helens' explosion giving me the opportunity to freelance that story as a reporter, that letter in my file might have ended up in several personnel offices. I don't know what that would have meant.

This has been an enormous digression. The question here is, what have I discovered about why I'm still in the denial phase. There are subtle aspects of disabilities that involve so much more than being a "T-5," if you can move your hands or not, if you have a high frequency hearing impairment, if you have a low tone hearing impairment, or if you were disabled at birth. There are events and issues related to disabilities that are very profound and which often are completely hidden for years by the medical profession or institutions' ways of approaching disabilities.

I was involved in an accident while I was hitchhiking. I got into the back seat of the car, and proceeded down the road. I went to sleep in the back seat, the other people went to sleep in the front seat; we woke up on the way down an embankment. I was conscious the entire time during my accident, during the ambulance ride, as well as during acute care and in the emergency room. I lost consciousness only when they put me under to do the decompression laminectomy. So when I woke up in intensive care after all that, I had had an experience incredibly rare in traumatic injury cases. I knew when I woke up exactly what was wrong with me, because I had the feeling of losing sensation in the car. I actually dreamed about being disabled while I was under, so when I woke up my mind was already involved in Course #202 on disabilities.

It was very clear to me that the other people with me in that facility who had experienced traumatic injuries, experienced their injuries in a medical sense and then re-experienced their injuries when they were told that they were never going to walk again. That message invariably dated the beginning of their trauma, so their rehabilitation was frequently phrased in terms of an argument with that guy in the white coat who said that they were never going to walk again. I was conscious the entire time, I woke up understanding enough about my body to know what had happened. I can't begin to tell you how significant that difference is in terms of how my particular experience related to those of many others.

An additional aspect is, there was no self-inflicted element of my situation. When I say self-inflicted, I don't mean it in a suicidal way. I mean, the replaying of the incident to try to find out "What did I do wrong, what did I do wrong?" I just got in the car, but my mother tried for a couple of months to say that I should never have hitchhiked, never, ever, ever - but that didn't stick. There was no one to blame, because the other people were killed. So it was very clean, and I don't know what that says. I don't even know how rare that experience is. But in terms of my dealing with other traumatic injury sufferers, this aspect of my experience versus the experience of the other people in my group, was never dealt with, was never a part of why we were different, was never something we discussed. It was never a part of their treatment versus my treatment. It's also clear to me that those first few hours, days, and weeks in the hospital and the way that people learn certain things about their potential medical, physical, and perhaps professional future, are the most important times that they are going to experience, assuming they live long, able lives as disabled persons. I mean that very literally and I use both of those words very deliberately. That time is very crucial and is at one of those rare moments in their lives when the impact of events cannot be overstated.

I was disturbed and then puzzled that the people who I encountered were not able (did not have adequate perceptions and flexibility) to detect this kind of difference and then translate it into efforts to help me prepare for a future that was uniquely suited to my particular needs. Also, I think the friends and people who I remember from that particular facility would agree that such conditions exist and they encountered similar experiences.

APPENDIX C

REACTIONS: COMMENTS BY A PANEL OF EXPERTS AND AUDIENCE REACTIONS

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REACTIONS: COMMENTS BY A PANEL OF EXPERTS AND AUDIENCE REACTIONS

Introduction by James M. Brown of the Panel of Persons Who Reacted to Mr. Hockenberry

Thank you very much, John, for discussing your experiences and for sharing your thoughts about those experiences. At this point I'd like to formally introduce the members of our panel who will make additional comments. First is Marge Goldberg, who is Associate Director of PACER (Parents' Advocacy Coalition for Educational Rights). Second is Pat Beck, who is a University of Minnesota student with learning disabilities. Third is Earl Brunberg, a Special Needs Supervisor with the State Board of Vocational and Technical Education. Next are Margo Imdike, a member of the Minnesota State Council for the Handicapped; and Gordon Krantz, who is now a private consultant, a true renaissance man who was a researcher in the Educational Psychology Department at the University of Minnesota and later worked for the Minnesota Department of Public Welfare. Gordon is now enjoying semi-retirement, but still deeply involved in a wide variety of projects. Next is Michael Erlichman, a lobbyist with the Minnesota Legislature. Finally, the last two panel members are Reed Wilke and Joan Orke from the Honeywell Corporation. I would also like to express my thanks to Mr. Wilke, Ms. Orke, and the Honeywell Corporation for co-sponsoring this Symposium, not only with their time and efforts in the planning, but also for bringing Mr. Hockenberry here to share this time with us today. At this time I will ask each of these panelists to share any comments that they may care to make.

Marge Goldberg

First of all, I want to thank John for his talk, because I found listening to him fascinating and he brought up so many thoughts as we listened to his very personal comments. John's feelings are really important to all of us who work with people with disabilities. The thing that rang out for me, because of the work I do with families, is the problem we have getting families to be able to use their own judgment about family members that may be experiencing disabilities, have grown up with disabilities or have become disabled later in life due to traumatic injuries. I think that most families are compliant, just as we have learned to make people with handicaps compliant. Families listen very, very closely to directions or philosophies that may be given from different institutions that tend to pigeonhole people. What we see happen during transition years is a real struggle between parents and young adults, during the very natural emancipation years. I sense that John's parents were extremely important people to him, given their support of his own self-advocacy, his own ability to assert

-- "Hey, this is me and this is how I'm going to do it" -- and they were not going to discourage that feeling, those dreams, the motivation that he had to make it his own way. Unfortunately, I think we sometimes have situations where families do become problems because they think they're doing the right things when they listen only to professional service providers. It's too easy to assume that everybody goes through this, so that is how it's got to be. When people are in this stage or that stage, and when they are involved in denial or feelings of depression and suicide, that's what many service providers feel they've got to talk to them about. So I ask, how do we reach families to help them during this stage, whether it be something new in their life that's happened, or just problems related to the transition years and keeping motivation levels high. Families are now playing more effective roles in these efforts than we've seen in the past.

Pat Beck

I'd like to talk about a couple of points. I agreed very much with John. One issue is related to the fragmentation of the disabilities and the public's understanding of definitions. Being learning disabled (LD), I find problems with educators and possibly people in the work place who do not really understand learning disabilities. People generally fall into three categories. One consists of people who have a basic understanding of what LD people are and what that involves. People in the second group don't really cause too many problems, like the teacher who wants to help and wants to learn more about learning disabilities. Unfortunately some people refuse to believe in learning disabilities. I had one professor that gave essay tests every Friday and I tried to explain to him: "Could I have a dictionary or something, Sir, because I can't spell very well because of my learning disability," and the man just looked at me and said "You're not learning disabled, you just had a bad elementary teacher, who refused to teach you how to spell correctly." We need to try to learn how to educate these people. Members of the third group look at learning disabled people as being one notch above mentally retarded and one notch below "stupid people"; that's the only term I can think of. I work with a student and when she found out I was learning disabled, she looked at me in a shocked way and said, "I didn't think you people could go to college, I thought it was against the rules, or something." So I really think that if you're ever working with an instructor or going to tell co-workers that you have learning disabilities, you really need to try to help them understand that we are relatively intelligent and capable people. We simply have weaknesses in a few specific areas that we should learn to compensate for.

We should also seek to let people work to achieve their goals. While I was in high school, I was not diagnosed at that time as being learning disabled. When I told my counselor that I wanted to go to college, and he looked at me and my grades and said "No, I think your best bet with your grades is to simply go into the Army, and get some training, and learn a skill." Of course, I followed his suggestion; that's what I did. But later on, I was able to get into college and now I'm fighting the system again. I'm trying to obtain a degree in Urban Studies, and I'm lucky that I found a professor who diagnosed my learning disabilities for me. It seems that we still have a long way to go. They tell us, "Don't take the challenge, go for the easy classes." Instead of saying, "Don't take the harder classes," say "Take it, but tell us how can we help you."

Earl Brunberg

You know, in many respects, sitting here makes me feel like the pastor with the parishioners in church, because the people sitting in this room are not the ones that need to hear from John or from maybe some of the rest of us. But based on my hope that some of the information that Mr. Hockenberry has given us and that the things we say today may eventually get to those that do need to hear them, I will make some comments.

One of the things that John Hockenberry mentioned focused on being outside the loop, and most of the time we catch ourselves being in the loop, and we have difficulty in breaking out of it. One of the jobs that he said he was involved in was as a behavior modification programmer. When I hear that term programmer it kind of drives a needle up my spine because too often that's really what we're attempting to do and we're doing it in vocational education as well, and we need to change that. After the comment about the fragmented disabilities, I couldn't help think that in the institutions and educational settings we also are fragmented. Just stop and think about the roles of vocational rehabilitation personnel and the limitations that they've built in, special education and the limitations that they've built in, human services and the limitations there, and never shall they all meet, especially when it comes to clients.

That's one of the things that we really need to focus our attention on. As you know, special education services stop at age 21 or 25, and I've never figured out just why, because if you're eligible for special education up to that point why aren't you eligible for special education beyond that? And also, why don't special educators take responsibility for the training and the outcomes of that training? At the same time, in vocational education we're just as guilty and we need to continue those services. And that leads me to another comment that John made about the vocational rehabilitation counselor who would have been unable to predict, in her wildest dreams, that he'd become a reporter. We in vocational education are trying to train people for a future when we don't even know what it's going to be. Perhaps that suggests that it is time to pay attention and begin to plan for changes in what we are going to prepare people for, and how we're going to prepare people.

Instead of taking credit for the completion of a course or the completion of a program, maybe we need to do some of the things that John mentioned about the nurses who don't like to take orders from patients. That's also true of most of the people sitting in this room. We don't like to take orders from students or from clients or from anyone else. Yet that's exactly what we should be doing. They may not know where they're coming from at the moment, but they have a better feel for where they want to go than we do. And again, we continue our programming efforts; maybe it's time that we take a look at that and stop it. You know, we are going to change some of that and perhaps there are two factors that will have the greatest influence. Here I'm asking for some of the support that you can give in our agency, at least. One of the two factors is economics. If you're hurting, you're going to listen. And that carries out to another factor and that's the rights issue. Individuals have a lot more rights now than maybe 10 or 13 years ago. I think we need to constantly hear about those rights and they need to be heard at the highest levels, including the Legislature and the department heads, in order to bring about needed changes. Our success criterion needs to be modified, and I've said that before. We just need to make sure that whatever we change it to is acceptable, not only to the agencies and whatever their goals and roles are, but also to the general population including the handicapped and the Legislature, which is the primary source of functioning. So, basically, we all need to sit back and rethink and retool virtually everything that we're doing. And we may be sounding like we're coming off the wall when we think about and do some of those things, but maybe it's time that everybody here, including myself, take that approach.

Margo Imdike

I want to talk about something that John said that I find particularly prevalent for people with disabilities. Maybe John is in the denial stage; everybody in the medical profession -- consultants, counselors -- seem to be telling him so, or at one time they did. Disabled folks are taught not to trust their instincts and to listen to the medical profession, the rehabilitation professionals, their families, those people who know better, and to buy into those statements. So a lot of disabled folks are led to believe people, who really may not know what they're talking about. In the work setting, you deal with people who may have very poor communication skills, you may be working with people who have very poor self-images, and then they are expected to interact with somebody who's disabled. Those poor communication skills are intensified, self-image is intensified, and this can directly affect the motivation of a disabled employee in the work force.

Let me take you through a process, a process that is for me and many other disabled people a reality. You establish a relationship, be it in the work force or be it in the community, with non-disabled persons. Generally, and almost immediately, double standards are established.

People who have disabilities are subject to double standards and lower standards. These lower standards usually include less responsibility and fewer risks, and a whole lot of false praise. So you're in a work force or you're in an employment environment and you've been given a job, but the job has fewer responsibilities, lower standards for you as a disabled employee, and this false praise. "You're doing such a good job; you're doing such a wonderful job." You don't want to ever have to say no to this disabled employee, so you set the stage so you don't have to ever be in a position to say no to this disabled employee, because you, as an individual, have been taught that you just don't say no to a disabled person, OK? But then you make sure not to give this individual any promotions, any high-risk assignments, and what you ultimately come up with is that the disabled employee is going to internalize the majority of what's going on around him or her. Once again they believe that it's their own instincts that are at fault, and it's their own capabilities which are in question, and that they're ultimately doing something wrong or they wouldn't be getting all of this false praise and yet no promotions and no increased work assignments. So I think if you're looking at motivation levels among your disabled employees, you've got to be real, you've got to be honest, and managers/supervisors and researchers take this concept back to those who have poor managing skills to help them improve those skills. Because if you set up a false environment for your employees with disabilities, you're encouraging those individuals not to trust their instincts and to exist forever in that denial stage, or whatever you want to call it.

Gordon Krantz

John Hockenberry, you look like your pictures, you sound like your voice, and you even come across as the kind of person you come across as. And perhaps that's a kind of integration that may have something to do with your self-actualization, with your success. It doesn't say you're a terribly virtuous person, I don't know whether you are. But I think that what I'm groping for is this matter of integration that's addressed by, yes even by our previous speaker with regard to autonomy, and the integration that may facilitate. Now, some of us have been around for a very long time and initially worked with the "handicapped," although we now call them "special populations." Our role was to be that of a technical expert primarily in the realm of choice, of, in other words, guidance. We had certain resources available that facilitated choice, and our clientele tended to have circumscribed disabilities, but otherwise they tended to be intact.

Over the years, we have observed that the nature of our client population shifted somewhat. The people who absorb a lot of our interest and our attention are people whose problems tend to be more generalized, whereas in the old days we thought of our clientele as very often orthopedically disabled. In more recent years, it's shifted to neurological problems and problems of general intellect and learning performance. Now, a lot of our focus at present has shifted, and we have become, as I said before we tended to be technical experts in choice and in finding, and providing the checkbook to provide, the things that facilitated the pursuit of a choice. Now we tend to become experts in training. And I use the word 'training' in contradistinction to experts in education, and some of us feel that precious little education is going on and a great deal of technically proficient training is going on. In educational programs, more so in special education than in vocational education, we have shifted primarily to an approach of management by objectives. And by objectives I mean a rather narrowly defined pursuit of a particular performance on the part of our student or client or whatever we call him. We have shifted to being able to do very well those small things that are essential. But I sometimes wonder whether they're sufficient. They may be necessary but perhaps not sufficient. And I think about our clientele, and how we have shifted our approach, with a clientele for whom the cognitive approach does not empower the individual. And yet there are other dimensions to the person besides cognition, and I wonder whether we need to look more carefully at the other dimensions of being a human being.

Now the reason that I'm groping is, as I say, that doesn't fit well with the things that we've become most skillful at lately, and that is the training of specific behaviors. So I guess what I'm looking at is, as a possible future trend, our becoming more skillful at dealing with these other dimensions of humanity more so than only the acquisition of particular skills. I don't know where that's going to lead us. I don't know even whether it's going to lead us anywhere. But I think it's something that we need to think of a little more broadly and creatively.

Michael Erlichman

First of all, John, at my rehab facility we knew each other by our level. In other words, I remember on my right side in the bed was a C-5, and I was a T-7. The C-5 doesn't think the T-7 is crippled. The T-7 doesn't think, I didn't think the L-1 next to me had any problem at all, and that's the way we looked at each other, so the first thing, they'd say "what's your level?" Your level of envy was predicated on what your level was.

Let me just maybe shift gears, taking us in a little bit different direction. Maybe reflect a little bit on who I am and how I came into this. Really, I'm a newcomer to the whole disability movement. I've only been in a wheelchair for about a year-and-a-half. After a year in the hospital with leukemia and a bone marrow transplant I was left paralyzed, permanently paralyzed. Prior to that I spent 15 years in local politics, in government, and I had been used to running campaigns and managing large political bureaucracies. In fact, I had a theory of politics and government and that was, if they couldn't love me then they damn well better be afraid of me. And I think the first shock you get when you're disabled and you're in a rehab disability is that nobody is afraid of you anymore. There isn't anything you can say or do to intimidate anybody. And I was used to being in political situations that demanded that intimidation was part and parcel of your success and your ability to function in that world. I guess my overwhelming response to rehabilitation and to vocational rehabilitation was that I was systematically programmed and conditioned for, I don't want to say failure, but certainly compliance, as John said. I was programmed for it. I was rehabilitated at the University of Minnesota. The rehabilitation program there, outside of certain physical aspects, is a joke. I mean, my occupational therapy consisted of making moccasins. You know, I was 35 years old. I had helped to be responsible for a $450 million budget, and I was making moccasins. And the ultimate irony is, I accepted it. It was a very paternal situation; the physical therapists were like little mothers who took care of me. I wasn't encouraged to face challenges, I was encouraged to accept my limitations. In fact, we spent more time talking about what my limitations meant. Every time you talked about being "well," you were not accepting the reality of your limitations.

Probably more important, and what has a longer term impact on the disabled, is the program, the conditioning to segregation. In fact, we're doing that right here today. We segregate the disabled. I do not earn my living, by the way, as a lobbyist: I have private pay clients. It would be hard to tell from some of the stuff that appears in the newspaper regarding me, because the newspapers are inclined to want to pigeonhole you; that, "he's a disabled lobbyist, therefore he earns his living lobbying for the disabled." No, I do lobby for disabled-related issues, but believe me, they don't pay me to do that. My clients expect me to lobby for them occasionally. But I equate the disability movement of today with that of the Blacks in the South in the '60s. The laws have been passed, and the laws had been passed for the Blacks, the fight had been won in many respects, but the laws weren't being enforced. And it wasn't until the time at which a reluctant John and Bobby Kennedy were essentially forced into sending federal troops into the South that existing voting rights laws were enforced. Well, it's much the same way for the disabled. The laws are on the books to protect us; the laws are on the books to provide us with equal opportunity and access to institutions, but they're not enforced. And the whole issue of segregation versus integration is the key one.

I make a fairly decent living. But in order to lobby, I needed a vehicle that was equipped with a lift, and most of my financial resources had been pretty well drained after a year in the hospital, and I was left, you know, in a financial state that left a little to be desired. So, all I wanted from DRS was help to buy a van. And somebody told me, "they can help you outfit a van." So I called up, made an appointment, and the guy immediately said "well, you have to go through an evaluation." And I said, "well, really all I want to do is see if I can get some money for a van, 'cause then I can go to work, you know, and then I can earn my living, ply my trade." "Well, you really have to go through an evaluation, and have you ever considered computer programming?" It seemed that, if you were disabled and you were in a wheelchair, that DRS counselors immediately equate you with a computer. That's the new salvo for disabled people. And in a way, we still segregate. Because what we're doing is putting all these disabled people in little cubicles with computers, and now we say "Good, we finally found something those 'gimps' can do; they can do computers, and God knows we need lots of computers."

Well, the fact is, I was encouraged to maybe get a job working with the disabled. I enjoy my political work with the disabled, but very honestly, I'm not trained nor am I terribly interested in working with the disabled. I have other career goals in mind. And I think it was the same situation when we were trying to integrate Blacks into the workplace. "Let's hire a Black for the head of Affirmative Action," you know, "let's put a Black in the Personnel Department, let's put a Black in the Minority Contracting Department." My interest is seeing that disabled people are fully integrated, that they become lobbyists, or they run for office, or they manage conferences, or whatever; whatever happens to be their particular desire. But ultimately, it isn't your attitudes that are going to change the situation for disabled people, it's disabled people's attitudes. If the Blacks in this country would have depended on the White culture to change their opportunities, nothing would have ever happened. It wasn't until the Black community just mobilized and demanded integration, that opportunities changed and ultimately that's going to be the answer for the disabled. We are, for instance, the largest minority in the State of Minnesota. We are larger than the severely disabled community of interest, larger than all the Blacks, Hispanics, and Native Americans put together. We have yet to become politically focused and organized, and I think the time will come when that will happen and when we won't have to depend on your attitudes. We won't have to depend on whether you like us or believe we should integrate. We will simply have those opportunities and the scale will be appropriately balanced to provide us with the opportunities to fully integrate. And, if you can make any contribution to the effort to wholly integrate disabled people and give them their place in the sun, it would be to encourage and to struggle along with the disabled to assert themselves and to say, you know, "don't be intimidated by the process, by the bureaucracy, by me, and become the full and productive person that God intended you to be when he put you on this planet, physically whole or not." That's what I think people in the professional fields of rehabilitation and transition can do for the disabled person. Thanks.

Reed Wilke

Let's see if maybe we can change the tone of this panel a little bit. I think there's nothing more boring than listening to eight people who all agree with one another. I want to talk a little bit about what it is like to be on the receiving end of the kinds of things that you do or try to do. I don't know that much about the field of handicapped rehabilitation, but I assume that most of you are in educational positions, training positions, leadership positions, or those types of roles. I guess I want to tell you up front that the kinds of people that you are sending me, as a representative of Honeywell Corporation, will not fit into my corporation. They don't know enough about the jobs, and they don't know what to do in a corporation. You're not sending me the kinds of people that I need to employ. Let me pose a question to you: What if tomorrow all aid for handicapped people stopped at the national, state, and local levels and your jobs ceased to exist. What would happen to handicapped people? What would happen? Does anybody have an answer? No support whatsoever; handicapped people were left completely on their own. What would happen?

Somebody said, "we'd be on the streets." I think that when we talk about self-esteem for handicapped people, or for anybody coming into the work force, what we need to do is make people tough. That's the only way they're going to survive. What if you knew all support for handicapped people would cease to exist two years from today? Would you teach handicapped people the same things that you teach them right now? Or would you give them a different set of skills? What's happening is that when handicapped people come to work for Honeywell, and they encounter managers who, when given a choice between morality and profit, will select profit every time. In such cases those handicapped persons looking for jobs are going to fail. Honeywell is a leader in efforts to employ handicapped people, Vietnam veterans, and Black people and a variety of targeted groups, but we do a poor job. Our managers don't want to hire handicapped people. One of our Human Resources directors said the other day, "I would never hire a handicapped person. It would cost me more to hire and retain that person, and they would be less able to do the job." Our Human Resources people even say that, and Honeywell is not the only corporation who thinks that way; that is a corporate mentality. I think what we need to do is think in terms of how tough people have to be when they go to work for a corporation, what kinds of things they have to know. If you're going to send me somebody, I would rather have somebody with limited technical skills, and reasonable coping skills and political skills. I can teach technical skills, but it takes too long for an employer to try to build self-esteem in a workplace where self-esteem is not really valued. Do you teach people as if they would have no support two years from today, and do you give them those kinds of skills? 'Cause if you don't, then you're not doing what you need to do for those people.

Joan Orke

My name is Joan Orke and I also work at the Honeywell Corporation with Reed. I'd like to give you a little bit of background on a program that we have at Honeywell right now. It's called "Managing a Diverse Work Force." Basically, what we're looking at is the fact that in 1995 most of the entering work force is going to be people who have traditionally been considered minorities. The work force is shrinking. There's going to be more competition for people; it's going to be a seller's market. What we have to do as a corporation, is we have to learn to manage people who are different than we are. We have to learn how to manage people of co[illegible] people who are physically handicapped, women, everybody. We have to learn how to develop those people, because we cannot choose our leaders from a small population. We have to be able to use all people. So that's good news for people who are handicapped.

I'd like, however, to talk a little bit about the situation that exists in Honeywell right now. My job at Honeywell is Diverse Work Force Specialist, and I am specifically charged with helping people who are handicapped to work into the system at Honeywell. I came to Honeywell four years ago as a programmer. I was disabled and I went through DVR and they decided that I could become a programmer. Well, I was the worst programmer in the world. I hated it. I didn't like anything about it, but it was the only thing that was available to me. I decided to use that as a bridge. I decided to go in, find myself a job and become a programmer and try to work for something else. It was very hard to do. It took me two years but I worked myself into a Human Resource position, and I had to fight for that every bit of the way. John Hockenberry said earlier that he, by a fluke, became a reporter. I don't believe it was a fluke, I believe that he worked for that. I believe that he believed in himself; he believed that he could become a reporter, he went out he covered Mount St. Helens, he called in his story, he got somebody to buy it, he worked hard, and he took risks. That's what I did, and now I'm going to make it in Honeywell. But we need more people like that. What we're finding is that people come into Honeywell right now, people who have disabilities, and they don't have those kinds of coping skills, they don't have the kinds of skills that say, "I know what I want to do and I know how to go after it." We find that there are a lot of people who come in and say, "Take care of me, give me a career, tell me what to do and do this for me." As long as this situation exists, people are not going to make it in industry. And I think that my challenge to you today is not that you teach people these skills but you help them find within themselves what they need to know in order to find out what they want to do, and then help them get there.

Mr. Hockenberry's Responses to Panelists' Comments

The question of language is completely irrelevant, whether you're talking about disability or ability; you're talking about change in a society that is ill-equipped to deal with new people in the marketplace and the diverse number of skills. You've got a population that is growing on the Southwest Latino front, you've got Blacks in the major cities taking over politically as well as economically, and you've got corporate management that is still not involved in the broad social contract in this country, and then you have rehabilitation functioning outside of that loop entirely, it doesn't know how to advocate within a corporate structure and it is stuck in a politically disenfranchised place to advocate for individual clients who are coming in. The question is political and it's also very, very emotional. You can talk about the language, you can talk about the style and the philosophy, but disabled people need to be looking at what scares them the most and going exactly toward that. It's a very simple thing. As long as they do that they're going to understand what their ability is at every point, and the question of their disability will not be irrelevant, but it will be balanced by the notion of one's ability. How you phrase it is completely irrelevant. I might ask the Honeywell Corporation what they would do if the Pentagon was not subsidizing a good deal of their defense development, but the point is not to slander Honeywell; they do an excellent job and they are involved in the social contract, but in this society we make subsidies of all kinds, we assist all sorts of phenomena to occur, and they involve partnerships of all kinds. In the defense establishment that partnership is set in stone; it exists in development labs of the major high technology companies in North America, really in the world. It exists in the political structure, there is a political will to do what is done at the Pentagon and to do what Honeywell and companies like Bell Labs do; all of that exists, that partnership is established. A similar partnership could exist in the social contract, in the social realm. We choose not to do it in this country and all of us are complicit. Disabled people need to choose to empower themselves. People who are involved in the social contract need to choose to empower the society, and the corporations are complicit because they need to choose to do something besides the bottom line because there's not going to be anyone there to view it at that last, annual stock statement before whatever that society becomes. And that is really the agenda for all of us, and disabled people fit into it very uniquely, but they fit into it in an absolutely classic sense.

Additional Questions and Comments
From Audience Members, Mr. Hockenberry, and Panelists

Audience Member's Comments

I have to speak up, because I'm in a uniquely favorable position to speak up. I'm no longer on the front line. I used to believe there were two perspectives I thought we needed to consider. One perspective is this: The person who has a circumscribed disability in an otherwise intact person does not worry me; I am not concerned about such persons. They can cope pretty well. I know you have plenty to be worried about, but you have a lot going for you and, as you have pointed out, to a large extent you can solve your own problems. You know what you want; you can defy advice successfully, because very often you are right, and when you aren't there's enough play in humanity, enough sloppiness in human affairs so that if you want it, you can do it. I am concerned with another group, not represented here today, who are inarticulate, who are not skilled at the game we play today of talking to each other, who have a generalized coping problem, and for them I have not heard much in the way of answers today.

The other perspective I would like to leave with you is related to the fact that many of my friends are still out there trying to serve. As articulate handicapped people become more skilled in the political arena, I would ask you one thing, to guard your utterances a bit, and not only talk about how terribly you've been treated, how inept your helpers are, but also consider they are your helpers, and stop and ask if they're so bad, why don't we get rid of them?

Another Audience Member's Comments

I'd like to go back to the arrogance that John and Joan and Reed mentioned and share with you what I think. I'm just arrogant enough to think that all of us who are here today are also arrogant in thinking that we can beat the system to some degree. I'm very concerned, though, about the economic reality and the corporate mentality that Reed is presenting, because I don't feel like we have enough tools to beat that corporate mentality. I need some hints on how to deal with the other corporate sector who are not of the Honeywell mentality.

Mr. Hockenberry's Comments

I think you do have the tools to beat that corporate mentality; you need to organize. Numbers will beat that mentality; a letter to the president of Honeywell, or the president of 3M describing how little they're doing for handicapped people.

The medical model in rehabilitation is very destructive in this sense, because it discourages politically oriented efforts. There is some sort of *fait accompli* that can be offered in any institution that will immediately empower individuals in little capsules that can then be sent out to corporations and become inappropriate, as the gentleman from Honeywell says. That is a problem. The only way to beat the corporate mentality is to force it as a political question. You have to understand and have a perfect vision of what it is you're going to offer those individuals in the corporation, and what it is you're going to be able to do to fight their intransigence, and the question of whether corporations will become part of a broad social contract in this country is not going to be decided in the disabled community; it's going to be decided by the entire society, and it is a question of will, of broad will, and it's absolutely a political question, and to look for solutions in medicine, strategy and academia is not going to encourage financing of such programs and any of this to become part of a broad agenda.

I don't think that it is true that corporate attitudes are exclusive of social concerns. I think it is a question of how much we abdicate corporate authority in this country. We just want to buy the products, we don't particularly care about the corporations. In other countries in the world, stockholders are actually a part of the policy-making in particular corporations, and when Americans understand that capitalism is a way of empowering themselves on a political level, then things will begin to change. If there were half-a-dozen disabled stockholders at the annual meeting of the Honeywell Corporation, things would get voiced and the Board of Directors would all be up there in the front, and you can do that with absolutely every corporation. I mean, a wacko by the name of Reed Urbine shut down the CBS stockholders meeting two years ago talking about whether Walter Cronkite was the reason that we lost the Vietnam War. And whether he advocated or encouraged this position or not, he precipitated a buy of CBS stock by Ted Turner and some of the conservative religious evangelists that began the whole process that CBS is still going through.

That is empowerment. That is kind of a Keystone Cops model there, but there's no question that the people who were at that stockholders' meeting, who actually decided to do what they did, started a chain of events that resulted in change of a corporation. This is a classic model in the United States. It happens over and over and over again, and it is simply a question of will.

But before I just shut up here, the thing about our articulate disabilities versus non-articulate disabilities is absolutely crucial, I mean, here we fragment the population one more time, you know. But there's no way that good old toughness is going to solve this problem. And the question is, good old toughness for who? If it's just the disabled people that are tough, then, you know, very little is accomplished. You people have to be tough. I mean, you have to be tough with the traumatic brain injured person who isn't going to respond, you have to be tough in the same way that disabled people have to be tough. You represent budgets and constituencies in a political bureaucracy that are every bit as daunting as the kinds of physical problems that any disabled person deals with, and if you project that toughness in pursuing your institutional agenda, that filters down and becomes part of the rehabilitation process. If someone can't advocate for themselves, then you have to advocate for them.

One thing that constantly frustrates me about the rehabilitation mentality and realm is that, by my way of thinking, and the people who I came out of the institution with, these were some of the most fascinating people with incredible potential, personalities who are not simply people who can be computer programmers, not simply people who can, like, get a job, not simply people who can pay for that double-wide mobile home that maybe they were back on the mortgage of when they had their motorcycle accident. These are people who can be leaders, these are not just pieces of meat, these are people who can actually contribute to society, and if they can't be computer programmers then maybe they can be ministers; if they can't be ministers then maybe they can write books, and if they can't talk then they can contribute in some way, and that is the toughness that we're really talking about here.

Empowerment is finding out what the contributions of the people actually are, and disabled people have a set of challenges unique in a society that's bored stiff, and if you can't see that then you're missing something. The people in your populations are capable, I think, of doing absolutely anything, and they should be encouraged to think that way. And, in the same way, you should be encouraged to think that your budgets and your agendas socially in your institutions are capable of going to the top of the bureaucratic agenda, the priority list. And if you don't think that, then that all filters down to the people in your institutions and they're going to end up over at Honeywell standing around with wet pants in front of the vending machine. And, you know, I say that very candidly, and, having been someone who's wet his pants on the air, I can say that. You know, these things happen.

Comments From A Panelist

I guess I tend to ignore my political orientation, but we seem to think about corporations as something with a consciousness that can be manipulated, and, you know, they just aren't. (Someone else interjects: "Yes, they are.") Well, they exist to make profit in this country. It is like the people who have said that it is disgusting that the oil companies are making this overwhelming profit at 125% per fiscal quarter.

Mr. Hockenberry's Comment

Well, the fact is that if the laws permit them to do that, that is indeed what they're going to do. And a director of a company is not going to come to his board and say "Listen, we only made 10% profit this quarter, but we want to be responsible, so we only made 10%; we could have made 125%." Well, he'd be out on his ear in a minute. He's going to be judged on the basis of his profit center. The degree to which corporations are prepared to assist in the integration of disabled people in the community will be the degree to which that aspect of corporate responsibility contributes and enhances their profit-making status. But I can't imagine that any corporation and groups of corporations are going to be critical in determining the future of disabled people. And maybe I'm just too cynical but I haven't ever seen it with any other sub-group in our culture and I don't expect to see it now.

Panelist's Comments

I think that a lot of people were employed simply because they have disabilities. There's a whole lot of that, someone has a social consciousness so they hire somebody. What I've seen is that such employees often fail to succeed. There are a wide variety of assumptions about what they can't do, and there's very little realist understanding of what they can do. I was told, "Well a company this size can afford a couple of people on the budget." I assure you that I didn't want to be there on the budget and I didn't want to be a burden. That experience was a terrible blow to my self-esteem. I consider myself a capable person, but I was in a deep hole at that time that I had to dig myself out of. Many people come into corporations and find themselves in similar positions; they're hired because it's the right thing to do, not because they are viewed as productive future employees. I think that we have to start focusing on what disabled people can do and start believing ourselves that they can become productive workers.

APPENDIX D

METACOGNITION AND EMPOWERMENT: IMPLICATIONS FOR VOCATIONAL TRAINING

By John G. Borkowski

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METACOGNITION AND EMPOWERMENT: IMPLICATIONS FOR VOCATIONAL TRAINING

John G. Borkowski
University of Notre Dame

Two weeks ago as I began to plan this presentation, I found myself half-empowered. Clearly, I was motivated to prepare this talk and challenged by the opportunity of speaking before a diverse group of educators, many of whom have been involved for years in the education of handicapped people or in administering special education programs. Although I realized my past work in child development and metacognition was relevant to this audience, I wasn't sure of the exact message. Thus, my empowerment was, in a sense, more motivational than intellectual, cognitive or informational. I proceeded to use the following weekend to search for a sign or signal that might give me a clearer grasp of my theme for today's presentation. On a brilliant, crystal clear Saturday morning, I put on my jogging outfit, went out to the lakes behind the campus of Notre Dame and did my standard three miles. Although the run was fantastic, as it was a beautiful spring day, I had absolutely no inspiration. In despair, I proceeded to visit the south dining hall, knowing full well that my inspiration wasn't going to be found there. To the contrary, as I opened the dining hall door, Lou Holtz, Notre Dame's head football coach, came running out, at somewhere around 60 mph, and ran me over. I said to myself, "Is this an inspiration or an omen?" I was immediately aware of the potential disaster: If I mention the name Lou Holtz to this Minnesota audience, there will be eggs and tomatoes thrown or at least boos and hisses. Nonetheless, let me take the risk and claim this chance meeting as a sign, not an omen. In the person of Lou Holtz there is a message that I want to convey about the nature of empowerment.

Here is a 150-pound, somewhat scrawny man, who graduated in the bottom half of his high school class and who apparently struggled with the "demands" of Kent State University to get a degree, barely making it through. Yet, in spite of potential limitations, Lou Holtz has emerged as an eminently successful coach, with outstanding records at North Carolina State, Arkansas, here at Minnesota, and hopefully at Notre Dame in the years ahead. There's something about the man that embodies the concept of empowerment. First of all, Coach Holtz is self-motivated and self-confident. He himself doesn't seem to fear failure, having a realistic view of life and his role in it. His mature, personal world view gets translated into his job as head coach: He understands the importance of skills and techniques, and also of giving to his players (and assistant coaches) both the motivational aspects of football as well as the cognitive, intellectual, and skilled sides of the game. In Lou Holtz, we see the two main components of empowerment, the motivational and the cognitive, and the inseparability of these two essential components in achieving independent, goal-directed achievements.

I was fortunate because on that same weekend a second sign occurred that reinforced and clarified my theme. Our family belongs to a very small church of about 100 people. Hence, it is a very personal community, which aims to reach God through service to man. It's a parish in which the people are supportive of one another and of others in the larger South Bend community. We have a soup kitchen, and play an active role in the local shelter for the homeless. The parish has a heterogeneous congregation: old people, handicapped people, and racial-ethnic diversity. On that particular Sunday there were four mentally handicapped men in attendance, all of whom live in a nearby residential home. At the offertory, the deacon who assists at Mass suddenly had to leave the altar. Given the deacon's job is to bring the bread and wine to the altar, our priest, Father Phil, had to find a replacement. He glanced around the congregation and almost instantaneously pointed to Matthew, one of the retarded young men. Matthew immediately came forward. You could see he was fearful of the task asked. Yet he went to the nearby table and brought the bread and wine to the altar flawlessly. He poured water over Father Phil's hands and performed in a very appropriate manner. As the service was nearing completion, the reaction in Matthew's face reflected his feeling of accomplishment. You could also sense the excitement in the congregation, who seized the opportunity to give Matthew the support and the approval that we all need and desire. This was a small event on Matthew's road to empowerment. It was provided by a priest and a congregation who understand intuitively about some of the ingredients that make up empowerment.

Matthew had completed a difficult task in a situation where failure was possible, but where the potential benefits for empowering him to assume other challenges were worth the risk. What if Matthew had failed? What if he dropped the wine or water on the way to the altar? Despite the immediate embarrassment, the occasion of failure would have been a valuable lesson for Matthew as well as for our parish community. First of all, I'm sure the community would have immediately given him another chance. Someone would surely have filled up the vessel, and Matthew would have gone through the ritual once again. Afterwards, people would have congratulated Matthew on his "hard-won" success. Failure is accepted in a supportive, caring community of teachers and learners. In a true learning community, men and women, like Matthew, grow and prosper because everyone is empowered to understand more about themselves and to expand about their capabilities. Thus, we find our identities and sense of empowerment in a broader social context, where we, like John Hockenberry, struggle to develop a broad social contract that binds together the members of a community.

Thus, the two signs I received, from Lou Holtz and Matthew, lead me to develop a theme of concern to all of us: How to develop skills, whether they be cognitive or vocational skills, in individuals who are very much in need of those skills and, at the same time, to empower those individuals to utilize those skills in challenging situations and to dare to develop new talents on their own initiative.

Strategy-Based Learning

For 20 years I've been working in the general area of strategy-based learning. The general goal has been to teach strategies to students in order to improve performance. At the outset of my work, I believed that strategy use, and cognitive activity in general, were somehow independent of the personal and motivational systems of the children with whom I worked, whether they were retarded, learning disabled, or non-handicapped children. This narrow perspective is not unusual since as a psychologist, it is customary to research one aspect of the human organism, but rarely two or more aspects. After all, most introductory psychology texts are divided into 15 chapters. Surely, this implies that there are 15 different aspects to human nature. In analyzing the parts, however, we frequently fail to focus on the intricacies and importance of their complex interactions.

My own work can be criticized because I have often focused too narrowly on the cognitive or mental side of children's lives, missing an important fact: It is the rare cognitive event that does not have motivational and personal overtones. Furthermore, it is the rare motivational or personal event that does not have cognitive correlates or consequences. What I want to demonstrate is how cognitive skill training and motivation go hand-in-hand. They are likely inseparable in theory and doubtlessly inseparable in educational practice. Thus, my theme, as reflected in the lives of Lou and Matthew, is the following: Cognitive skill training should include explicit motivational components. This is because newly learned skills have the capacity of heightened motivation and elevating self-esteem. In turn, elevated self-esteem and heightened motivation will enhance the generalization of skills to work settings, and, perhaps, stimulate the invention of new skills. This is what the Honeywell personnel staff means by "job toughness" - the ability to adapt and modify old skills to new challenges in a changing work place. The model of performance that I advocate should help to develop "mental toughness."

I've long been interested in impaired performance and ways in which strategy use might influence human performance. The approach taken is to teach children how to solve various tasks, from memory tasks to reading tasks. The goal is to approach learning assignments by first finding a viable strategy or plan. The reason this is important, especially in our society, is that in almost all classrooms in the United States, you will find less than 1% of the teachers discussing learning strategies in their classroom in a consistent and systematic way. In our schools, we tend to teach facts. We teach rote learning and do very little about teaching "how to" - how to read, how to perform memory problems, and how to problem solve. This is despite the fact that contemporary research in educational psychology has discovered that children can be trained to use a wide variety of learning strategies. The problem is, however, that they seldom generalize those strategies; that is, we train people to use a strategy in one situation, and often find that it isn't applied in another situation where logically it would be quite appropriate. This is called the problem of generalization. It's a problem that we encounter, in a special way, in the latter part of secondary school training with mentally retarded or learning disabled students, where we train skills hoping that they'll generalize to the work place, but often finding they do not.

A Model of Metacognition

In order to understand how to deal with the problem of strategy generalization, I want to introduce a construct called metacognition, or self-awareness about individual strategies and their importance. The more people use a strategy, such as repeating things over and over or organizing material that's capable of being clustered or elaborating upon to-be-learned materials, the more likely they will come to understand about the attributes of strategies. That is, strategy-governed learning helps students to recognize when the strategy will be applicable and when not, how much effort will be involved, and what benefits are likely to follow from its application. The greater the understanding students have of the skills we teach, the more likely that they will put the strategy to use in improving performance in new situations. Hence, a large part of our training efforts should be focused not only on teaching skills per se, but also on the essential attributes of each skill in order that students come to understand why, when, where, and how each strategy is applicable. Too often, as teachers or researchers, we present a strategy or plan without considering how it is being incorporated into the existing knowledge structure of individual students. Repetition, diversity, and intensity are required to teach a strategy thoroughly. Strategy learning doesn't come easily; it doesn't follow a single presentation; it develops only with great effort. I would argue, however, that a full understanding of a strategy's attributes is an essential first step in training the child or the adult to generalize the newly learned skill.

Beliefs About Controllability

As children learn more and more about specific strategies and use those strategies over a period of years to improve their performance, they acquire what we call general strategy knowledge, a belief in their own capacity to make a difference in learning outcomes. This belief centers on the recognition that effort put to use in deploying skills will pay off. Thus, an important by-product of cognitive activity based on strategy use over a long period of time is an increasingly firm belief in the ability to control one's own learning destiny, a belief in self-efficacy. A student acquires the following recognition: "I can probably perform this task well if I have the requisite skills and fully understand how those skills can be used to solve this task. If I don't have those skills, I need to find out about them and then I probably can solve the task." This is a statement reflective of a self-efficacious learner.

Rather than viewing learning ability as fixed and immutable, a child or an adult with a positive attributional belief system will consider the "self" as changing, as growing, as a life-long process of acquiring new skills that will produce more competent learning and problem solving. In this sense, the feelings of competency that Ed Deci discussed this morning are traceable to individual cognitive acts. If these cognitive acts are performed in a context of teacher support, positive feedback, and clarification of mistakes (as we saw in the example of Matthew at church), then a young student will grow to believe in herself or himself as a self-efficacious learner. This belief, in turn, leads to increased achievement motivation and, if performance is successful and the social context supports and reinforces that success, an elevated sense of self-esteem.

You can now see why I said earlier that a major problem with psychology was that we tend to compartmentalize or fragment our discipline. The approach I have suggested runs counter to this trend, arguing for the integration of cognition with motivation and personality. This is because most important human actions involve multiple components of mind and will. The examples I have show how three components - strategy use (cognition), attributional beliefs (motivation) and self-esteem (personality) - combine to influence performance. Attributional belief and self-esteem cause individuals to approach, rather than avoid, various new tasks and to view those tasks as learning opportunities rather than as learning obstacles. Instead of giving up too early on a task because it is seen as difficult, a child with a healthy attributional belief system will "challenge" the task, because she or he is motivated to utilize all available resources to solve it and is unafraid of potential failure.

Teaching Executive Processes

It's not enough to have individual skills, requisite knowledge about those skills, and a healthy belief system about oneself as learner. A student also needs to know how to deploy learning strategies and skills. As teachers, we should instruct general problem solving techniques. This means that whenever expert problem solvers are faced with a difficult task they generally step back, think about what's being asked, choose a reasonable way to approach the problem, monitor how well the strategy is working, and then try something else if necessary. This component of metacognition is called executive processing (Borkowski, Johnston, & Reid, 1987). We have found that hyperactive and learning disabled children, who suffer most in terms of not having these executive processes or controlling mechanisms, can learn to be more deliberate, to be more selective in deploying available cognitive resources, to monitor how well those resources work with individual problems, and to revise strategies as necessary.

Children can learn about executive processes provided we have a theory of instruction to guide the teaching of problem-solving behaviors. This theory is contained in the model of metacognition that I have sketched. It involves three basic components: teach strategies, teach higher-level guiding mechanisms (executive processes) to implement those strategies, and most important of all for the topic of empowerment, teach a belief system in self-efficacy which will promote the use of strategies on novel or difficult tasks.

The Importance of Attributional Beliefs

Let me provide an example of a recent training study where we demonstrated that the motivational attributional component in the metacognitive model makes a major difference in the quality of skilled learning. Our hypothesis was that the reading performance of underachievers could be improved by combining strategy instructions with attributional retraining. Underachievers were initially selected using a two-step process. Third-, fourth-, and fifth-grade teachers were asked to nominate children currently receiving C and D grades, yet who appeared capable of working at a higher level of performance. Next, these children were then given two tests of ability: the Slossen IQ test and the Peabody picture vocabulary test. Distributions of IQ score and grades in reading were transformed to z distributions, and the z-scores for each child's reading grade was subtracted from his or her z-score for IQ. Children with differences in scores of .5 or above were considered underachievers. Forty-four underachieving children were subsequently chosen and given the following tests: (a) an attributional measure to assess their beliefs about the causes of success and failure, (b) a self esteem measure, (c) a test of action control, (d) a measure of reading awareness, (e) a measure of strategic reading behavior, and (f) tests of comprehension accuracy.

Underachievers were then divided into three treatment groups: Strategy-plus-Attribution, Strategy-Only, and Control conditions. Children in each condition were given six sessions of strategy training involving three comprehension strategies: topic sentence, summarization, and questioning strategies. The combined Strategy-plus-Attributions condition focused on training comprehension strategies about the importance of identifying main ideas and also included attributional instructions embedded in the steps of the strategy. Children were not only trained to use extra effort but were also taught how and why effort used to deploy the summarization strategy might improve performance, especially when expended in deploying a strategy. At each step, the need to use effort was reinforced. For example, following a reading of the to-be-learned paragraph, the instructor asked the children if they had read the paragraph and understood each sentence. The instructor then suggested that reading and searching for meaning always requires considerable effort but that this extra effort is necessary for successful recall of a passage. In the Strategy-Only condition, comprehension strategies (but not attributions) were taught. The Control condition exposed the children to the materials but involved no training. Two weeks following the last training session, children were given a post-test, using the same measures as at pretest. Fourth-quarter grades were obtained from the schools.

The results highlighted the importance of enhancing the child's belief system about the internal causes of success. The Strategy-plus-Attribution group was found to perform significantly better than the Strategy-Only and Control groups on three measures of reading: strategic behavior, passage recall, and fourth-quarter grades. These findings suggest that the addition of attributional training to a standard comprehension training routine promoted the application and generalization of summarization strategy, such as the transfer of "searching for the main idea," to the classroom setting. Finally, changes in attributional beliefs from the pretest to the post-test were analyzed in an effort to understand the role of self-efficacy in producing good reading performance. The data suggested that children in the combined Strategy-plus-Attribution condition significantly increased their positive attributions about the importance of effort in strategy deployment. This recent study with underachieving elementary-level students demonstrates how the model of metacognition can lead to a change in instructional practices. The change would involve a combination of motivational or attributional instructions and direct strategy training. Benefits that might be anticipated would accrue to the belief system itself as well as reading performance, both in the laboratory and the classroom.

The "Good Strategy User"

Let me summarize here what the model of metacognition implies about the student who is a "good strategy user." Table 1 contains all of the essential factors, most of which have relevance for you as teachers of handicapped students. I should hasten to add, however, that these characteristics represent the idealized learner, few of whom can be found in the real world (Pressley, Borkowski, & Schneider, 1987).

First, good strategy users know a large number of useful ways to approach problems. That is, they have at their disposal a large number of learning strategies that can be used with reading, math, memory, or more general problem solving tasks. Second, good strategy users understand when, where and why learning skills are important. They recognize that each individual skill fits certain situations but not all situations. It is also important for the good

Table 1

Characteristics of The Good Strategy User

1. Knows a large number of useful learning strategies.
2. Understands when, where, and why these strategies are important.
3. Selects and monitors strategies wisely.
4. Is intrinsically motivated.
5. Adheres to an incremental view of the growth of mind.
6. Doesn't fear failure; in fact, realizes that failure is essential for success.
7. Is not anxious about tests; rather sees them as learning opportunities.
8. Believes in carefully deployed effort.
9. Respects and appreciates the diversity of human talent (uses self rather than others as the basis of comparison for judging progress).
10. Is supported in all of the above by parents, schools, and society at large.

strategy user to be able to select and monitor strategies wisely. We need to teach how to be more reflective, deliberate and thoughtful about the problems that are presented; to analyze the problem, find out what is being asked for, select the most viable strategy, see if it works and monitor the results, and then revise it if it isn't working as well as desired. This is why high-order executive skills, or ways in which to implement lower-level strategies, are essential for the generalization of new skills.

Next, we come to a theme echoed by Ed Deci this morning: That intrinsic motivation is an important part of skilled learning. If we simply work for an external reward, for the approval of someone else or for the obtaining of money, then the ingredients of metacognition are going to be very difficult to train. But if the individual can be assisted to feel more competent, to grow to become an autonomous learner in the contest of relating to other people, then higher levels of intrinsic motivation are likely to follow. Apparently, typical school settings tend to decrease children's natural tendencies towards intrinsic motivation. Hence, as educators of adolescents or adults in vocational training, we need to recognize the fact that intrinsic motivation has likely been changed in our students by a decade or more of educational experiences that have stunted the development of their sense of self-competency and autonomy. Teachers of adult students need to worry about retaining attributional beliefs, building up feelings of personal competency, and developing autonomy through the careful training of individual strategies and the high-order skills necessary to implement them. By training metacognitive skills, we can dislodge the cycle of negative intrinsic motivation that is so common in many adolescents and adults who have learning handicaps.

Carol Dweck of the University of Illinois has recently discussed the fact that children often acquire one of two views about the growth of their own minds. One view represents the fixed or static model. The other, the incremental view, holds that children come to recognize themselves as changing, as growing, as learning something new each day. In this model, learning experiences are chances for self-growth. Hence, children will place themselves in positions where there are learning challenges and opportunities because their mind might mature and change as a result of the experience. On the other hand, if children have a fixed view of mind - a belief that performance is due to innate genetically-determined abilities over which there is little or no control - then they will place themselves in situations that will most certainly produce failure. For those children adopting a fixed view of mind, learning challenges will be avoided because "if I fail the challenge, it will prove that I am one of the stupid people." A belief in the fixed-mind theory - "stupid people fail, smart people succeed" - tends to make children avoid confirming the self-depreciating hypothesis that implies that they are one of those "stupid people." Obviously, such children fear failure, and will likely fail to recognize that failure is essential for success. It's natural then for students who fear failure to be anxious about test-taking situations, because tests will be occasions when they're given negative feedback about their learning impairments or their lack of ability, rather than as learning opportunities.

There can be almost no important intellectual successes that are gained without failure occurring along the way. One problem I have with mastery learning, or error-free performance, is that it seems to discourage individuals from taking chances and risking failure. For instance, our parish needed to give Matthew the chance to "drop the wine" in order for him to grow motivationally and cognitively. Without allowing students the chance to fail, cognitive development will be restricted and the emergence of beliefs about self-directed learning thwarted.

It should be emphasized that good strategy users respect and appreciate diversity in human talent and use themselves, rather than others, as the basis for comparisons about the quality of performance. The comparison group of interest isn't how well I'm doing against you but how well I'm doing against me, in terms of judging progress. By understanding and implementing the first eight points listed in Table 1, students will be more likely to recognize the uniqueness of each individual, in terms of both God-given talent and the environmental opportunities that maximize the development of those talents. It is in the recognition of diversity that we develop the social contract discussed by John Hockenberry earlier today. An important component in this contract is that in appreciating the diversity of human talent we tend to diminish the relevance and importance of the concept of normalcy.

Why does the proposed state of affairs that might produce "good strategy users" seem nonexistent in contemporary society? One reason is that our schools have not traditionally focused on skilled learning and problem-solving techniques. An emphasis on rote memorization and an unconscious reinforcement of the fixed-mind theory have characterized American education. Clearly, society at large has failed to ascribe to the incremental view of students' minds. Two sets of data support the contention that we do not teach students the skills necessary for them to succeed, especially in novel situations. Both Barbara Moely at Tulane and Lee Swanson at Northern Colorado have observed classrooms that represent wide age ranges of children. The classes cut across all subject matters. They observed that teachers spend less than 1% of their time in teaching skills, strategies, and the executive processes that would guide their implementation.

When students in the United States are compared with students from China, differences are found in the extent to which they maintain the fixed or static view about the development of their minds. Harold Stevenson has shown that children from Asia tend to believe that the job of education is to help their minds grow, to allow new mental processes to emerge. Thus, Asian children hold an incremental view of mind which leads, as I have tried to point out, to a host of healthy concepts and beliefs about autonomous learning, feelings of competency, and self-esteem. In contrast, Carol Dweck estimates that 25% to 30% of children in the United States believe in a fixed or static view of mind, which discourages them from undertaking learning challenges and lead to a state of helplessness and a tendency to fear failure.

In our society, there is little coordination between the activities in the home and in the school. It is the rare teacher who has the luxury of parental support for her day-in-day-out educational goals and practices. For instance, a teacher of a local kindergarten class decided that there would be homework from the start of school to the final day of class. The homework was rather simple: "Bring something in that starts with 'C,' " or to "Think of some words that rhyme with bed" - very simple tasks indeed. But the children were required to perform these activities at home and parents were told to spend 30 to 40 seconds with the child in getting an answer or finding something around the house to bring to school. The net result was that each child learned the concept of "homework" as an integral part of their kindergarten experience. Homework became enjoyable for child and parents, because there was consistent discussion about school and positive sharing with one another. The problem was, however, that concept was quickly forgotten, because in the first grade there was little or no homework. Now, what if the whole system were structured and coordinated, involving parents (or advocates) and teachers in the educational process from beginning to end? Clearly, one result would be the emergence of a greater number of "good strategy users." Both the school itself and its lack of clear objectives about the importance of strategies, together with instability in many American families, make the implementation of the "good strategy user" model problematic.

Metacognition and Vocational Training

There are major problems in our schools, in our families, and in our society at large that have prevented the implementation of the good strategy user model. The question becomes: Is there a way out? I think there is, and it probably begins with each one of us in our respective roles as educators. For instance, Table 2 attempts to extend the good strategy user model to vocational training, especially in the transition from vocational education to the work place itself. This framework provides a unified theme by focusing rehabilitation efforts in four areas.

Table 2

Empowerment, Motivation, and Job Training Perspectives from Metacognition

Step 1	Step 2	Step 3	Step 4
Explicit skill training	Enrichment training (Understanding)	Enhance self-efficacy and beliefs about effort	Training implementation, monitoring, and revision skills

First, we need to recognize the need for explicit skill training (Step 1), helping children to acquire feelings of competence and to become more autonomous learners in the context of relating to other people. Then we should embellish upon skill training (Step 2). To produce generalization to the work place, we must teach a greater understanding of the relationship between skills and their transfer to new situations. Next, we should try to enhance self-efficacy and beliefs about the importance of effort (Step 3). We might assist students who do not have healthy attributional beliefs, to acquire beliefs that hold that effort - not blind effort but carefully deployed effort - is worthwhile and will lead to good performance. And then, finally, we need to teach implementation, monitoring and revision skills (Step 4) which will be necessary as adults face the complexities of a changing work place. There a greater range of executive skills for solving new tasks will be required. The net result of using these four steps, based on a model of metacognition, might be greater adaptability and "toughness" in handicapped persons.

Although the "good strategy user" model provides general direction for vocational training, it requires a great deal of effort to implement. It requires modifications to meet the specific needs of vocational training. It also requires political action on all our parts to convince society at large to respect the diverse talents that we find in American society and to develop a broad social contract that will produce a more stable, meaningful, and equitable society in which we all have opportunities to gain greater self-understanding, autonomy, and empowerment.

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APPENDIX E

REACTION TO JOHN BORKOWSKI'S PRESENTATION

By James E. Turnure

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REACTION TO JOHN BORKOWSKI'S PRESENTATION

James E. Turnure
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In this brief commentary on John Borkowski's keynote address, I would like to begin by restating an observation I made in my remarks introducing him. I have never found a presentation of John's to be other than insightful and inspiring for he always provides information and guidance along with stimulation and encouragement toward progress on the task at hand, be it in research or practice. His talks embody the basic principles of action; energy and direction (Duffy, 1957). And, it appears to me, it is to these two principles, as expressed in the contemporary psychological terminology of metacognition and empowerment, that the wide-ranging contents of his lecture reduce. John, forsooth, in word and deed, practices what he preaches.

But while John may be said, by me, to be one of the few individuals who might meet most of the criteria needed to be an "ideal problem solver," even he, he assures us, is occasionally only half-empowered. And it is in his description of how he became fully empowered (involving the anecdotes about Lou Holtz and Matthew) that I find the basis for expanding on his depiction of the ideal problem solver, and even the grounds for suggesting why there are so few of them, and how most of us get to be the imperfect, although hopefully adequate, problem solvers that we are. For it is in the types of social situations that we spend most of our time and expend our energies that we find embedded the conditions that sharpen or blunt direction and purpose, and enhance or suppress interests, abilities, and skills, even in we adults, but particularly during childhood and early development. In other words, I believe that it is the tenth, or last, and, as expressed in John's lecture, apparently the least, of the pertinent characteristics of the "good strategy user" (i.e., the support of one's personal characteristics by parents, schools, and society at large) which is really the initial or fundamental basis for successful adaptation to the world, and that an equally long list of requisite social components would follow from it (Turnure, 1985, 1986, 1987). Nothing in the comments that follow should be considered as a rejection of the need to study the cognitive and motivational processes John has emphasized. Rather, the present commentary is primarily an attempt to rectify an apparent oversight I have found in much previous theorizing. It is an effort to stimulate more social, communicatively-based research and practice in cognitive development and effective instruction.

I will not enumerate a long list of social and communicative components here, but simply comment on two general issues that emerge from such an interpersonal orientation. The first issue involves the development of a personal sense of trust. I notice that Professor Borkowski trusts Coach Holtz, and the coach certainly has trust in his football team and in Notre Dame (and its alumni!). John also trusts in his church and in young Matthew, and Matthew obviously trusts in his fellow church members. Such trust is the result of positive experiences in numerous lifetime tests, and deep and secure emotions. Trust is the primary and most basic emotional structure in Erik Erikson's developmental theory of Childhood and Society (Erikson, 1963). I believe that engendering a sense of trust is a precondition for establishing a good, basic communication system, and that both of these conditions are prerequisites to nurturing positive human motivational and cognitive developmental processes. If we can move effectively and sensitively along these lines of social nurturance, then, I feel, we may be in a position to focus our intervention programs on the processes and phenomena that much recent theorizing has ensconced in, or under, the rubrics of metacognition and empowerment.

When I chose to identify the fundamental condition of trust with Erikson's theory, I did so because it is a notable feature of his epigenetic theory that any major positive facet of the personality (i.e., trust, autonomy, initiative, industry, identity, intimacy, generativity, and ego integrity, just to mention the positive polarities), once it is operative, will remain available for activation throughout subsequent developments, creating as he puts it, "a series of potentialities for changing patterns of mutual regulation" (p. 69). Thus trust may be established at any point in development, but it can also be destroyed. Many of us who have worked directly or indirectly with the developmentally disabled and other groups with handicaps over the past twenty years or so know that, generally, an increasingly broader climate of trust has developed, and that the trust needed for positive development in individuals is established earlier, and less often extinguished, than in the past. Therefore, we are not surprised that whatever groups we are personally most involved with are more confident, in Erikson's terms, or are more empowered or empowerable, in Borkowski's, than has been the general case previously. Thus, it is my observation that motivation and energy levels are high, and people can be "psyched-up" for projects fairly readily.

That the focusing of energy and the establishment of proper direction in development emerge from the communication systems in which people live is an emerging theoretical position which underlies my second issue (Bruner, 1986; Heath, 1983; Turnure, 1985, 1986, 1987; Vygotsky, 1978; Wells, 1981). This position is anchored in the premise that the centrality of communication in social affairs implies that research on language and communication is crucial to the understanding of most human learning and development. For instance, I have proposed that many changes in human development seem to be instigated by changes in social organization and interaction patterns and the communication systems that coincide with these social complexes (Turnure, 1986). Communication, like trust, is something that must be established to nurture development, and, again like trust, is something that can be established and destroyed at almost any time.

In the space available, and with the acknowledgment of my deplorable lack of awareness of possible examples from the literature on vocational education, I will attempt to validate my personal emphasis on communication theory by reference to one point in John's presentation. At this end of his section on "Teaching Executive Processes," he states "we have a theory of instruction...contained in the model of metacognition that I have sketched." He then lists these components: Teach strategies, teach higher-level guiding mechanisms (executive processes), and teach a belief system in self-efficacy. From the communication point of view, his model may have identified *what* to teach, but it has in no way specified *how* to teach it, nor indeed what it means to teach anything, which are what I believe matter in a theory of instruction (Turnure, 1985, 1986). John proceeds in his next section to describe an experiment which appears to embody his components; unfortunately, his abstract of the study is not sufficiently detailed for me to evaluate it from my framework, as I have done for a broad array of other research (Turnure, 1985). Suffice it to say, since the experiment produced positive effects, it should be the case that the "teaching" activities of the experimenters should conform to certain principles of communication which I have adopted from Grices' (1975; see also Miller, 1981) analysis of conversations. In general the experimenters in the most successful conditions must have been more cooperative than those in the other conditions. More specifically, those people must have been more truthful (or at least, less misleading), more intelligible, more relevant, and/or more informative in the effective conditions. Obviously, I am even more adamant than John about the need for a specific theory of instruction. Furthermore, my position leads me to propose that, as we face the complexities of the changing work place he refers to at the end of his paper, we need as much or more cooperation and communication as we do the greater metacognitive adaptability and "toughness" that he mentions.

In conclusion, I can only hope that I have practiced what I have preached, regarding communication, half as well as John did in his presentation and chapter. At least I tried to be cooperative; I have provided some principles that could be used to evaluate my own comments!

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APPENDIX F

SYMPOSIUM SUMMARY AND REVIEW COMMENTS

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You and I both know that the person who provides the summary has a difficult spot on the program. You are all anxious to leave for home, but before I let you get away, I want to say a few words about the fascinating program in which we have participated today.

There is no need for me to summarize the panel discussions. That has just been done very adequately. My only wish is that I could have participated in all three of the discussion groups. The one in which I participated was very enjoyable, and the presentation on the other two sounded just as interesting.

Today we have had three very different kinds of presentations. All of them were good, but they were very, very different. Edward Deci gave us a three-point program for success:

1. Let's develop feelings of competence in the people with whom we work;

2. Let's develop self-determination skills, which suggested to me (though he didn't say it) that perhaps some of the types of behavior modification with which we have been involved are counterproductive to a considerable extent; and

3. Let's develop relatedness to others.

I wish that he could have said much more about the third part of his program for success. He covered the first two quite thoroughly and convincingly. I am positive that the third ingredient is also extremely important. I came away from his presentation wishing very much that I knew more, and that I could have heard him say more about it. For example, are segregated classes the way to go about developing relatedness to others? I don't think so, but that is the way we seem to be moving more and more of our programs.

The second presentation was by John Hockenberry and the panel. This was another fascinating presentation, but very, very different. John and the panel members certainly do not represent the non-articulate part of the population with which we deal. They are extremely articulate, which is helpful to us, because we need to hear directly from participants in programs such as we operate and from advocates for them. We need to remember, however, that the vast majority of people with whom we work are not able to tell us as clearly what they want and need. Moreover, we ought to remember that John and the panel are obviously very able. They probably would do very well in work and other parts of life even if we didn't do very much for them. Indeed, in one or two cases, panel members sounded a bit as if they were saying, "We made it in spite of those who were working to 'help' us." They were suggesting that we need to prepare people to be tough and we need to prepare them to take political action. They are most assuredly right. I just wish that they had said a little bit more about the kinds of preparation for life we should provide for the relatively less able and less articulate, but numerous and important people with whom we work.

Our third presentation, by John Borkowski, was, again, very different. I very much liked what he had to say about building a belief in the incremental growth of competence. Those are carefully chosen words for a very important concept. Certainly we don't want to reinforce the common, non-productive beliefs that "I'm dumb," or that "Success comes only by chance." Unless we are careful, that kind of reinforcement comes too often, so we want to keep in mind the goal that John laid out for us. What I wanted very much to do was to have an opportunity to talk with John about the specific ways we can best go about striving for and attaining that goal.

What were some things that we ought to have heard but did not? Comments such as these are unfair to the planners and the presenters because all of them had to make difficult choices about what to include and what not to include on a one-day program. Nevertheless, I'm going to make some suggestions because it gives me a vote on what might be considered for another program such as this one--and I sincerely hope that there will be another one soon.

I've already indicated a personal need to hear from the non-articulate persons with whom we are or ought to be working. Some groups which come to mind immediately are the mentally retarded, the emotionally disturbed, those who have sensory impairments--the list could go on and on. Some of them could communicate with us through writing; others would need advocates to present their views. Perhaps we could not find ways to let some people tell us their needs, hopes, aspirations and frustrations, but we ought to try.

I would also like to hear from a social anthropologist such as Joan Ablon about groups such as dwarfs who are handicapped but often feel that they are not; who fear, initially, to meet with others who have similar problems because it means that they must look more closely at their own problems; and who must decide whether or not to have children, some of whom will be like them.

What are some of the longer-term effects of segregation and of mainstreaming? How do these treatments affect the development of relatedness to others, which Dr. Deci and I feel is so important? What are some of the causes and effects of shifts from segregation to mainstreaming, as in the movement of emotionally disturbed people onto the street?

Would it help us if we learned more about why community groups are opposed to the establishment in residential areas of small communal homes where handicapped individuals can learn independent living skills?

Where can we find a seer who will look at our future and at the future of the people we serve? Could such a person look at demographic trends, labor market trends, health care trends, and educational trends to see their effects on us? Could that person look beyond the extrapolation of trends to see how we can affect the future? Our panel wants us to do this, and I agree with them. But enough of my trying to plan five or six day-long sessions for the future.

Finally, let me hark back to our three excellent presentations and point out a difference that I heard. Perhaps you didn't hear it, but I heard three different views about structure. I heard Edward Deci saying, "What we want to do as professionals is to provide an optimal structure for our programs." I thought that John Hockenberry and the panel were saying, "No, you folks are providing too much structure, now. Moreover, it is the wrong kind of structure. You folks are slotting people into jobs, and you are spending too much time teaching us how to lace moccasins." John Borkowski approached the matter of structure a bit differently by stating that "Teachers assume that they should choose teaching-learning strategies." Now, I certainly think that is the way *I* teach. I have always assumed that I, as a teacher, *ought* to choose the teaching/learning strategies. John says that I am wrong, and he almost has me convinced. John says, "For self actualization, people need to be taught to choose their *own* learning strategies." This certainly makes sense if we are going to promote continuing learning for the handicapped just as for everyone else. John also said that effective learning strategies vary from one task to another. I believe this, and I also believe (though John didn't mention it) that effective learning strategies vary substantially from one person to another. Both of these variations suggest that self-determination of strategies is important. So, having someone else, even a professional teacher, always providing a specific set of teaching/learning strategies for everyone in the class is certain to be counter-productive.

I have learned from today's program and have enjoyed the learning. I hope that you have too.